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ABSTRACT

This document is the General Research Corporation (GRC) report on Task II, which called for the development of career fields for headquarters and regional positions of the U.S. Nuclear Regulatory Commission Office of Inspection and Enforcement (NRC/IE). GRC examined the data of Task I (development of qualifications requirements) for commonality of knowledge and performance, postulated career fields as a result of that examination, and tested and revised those career fields by more extensive examination. Proposed as a result of this are four career fields: construction-vendor, health physics, reactor operations, and safeguards; and two "career ladders": fuel facilities and investigation. (The term "career ladder" was chosen to describe the relatively narrow patterns of positions open to its members.) All career fields include subfields, which are described in full in the report. In addition to recommending acceptance of these career fields, this document proposes the combination of certain subfields, the retitling of some positions, and the adoption of a standard nomenclature for all NRC/IE positions. (Author)

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CAREER FIELDS FOR INSPECTION AND ENFORCEMENT PERSONNEL

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ABSTRACT

This document is the General Research Corporation (GRC) report on Task II, which called for the development of career fields for Headquarters and regional positions of NRC/IE. GRC examined the data of Task I (Development of Qualifications Requirements) for commonality of knowledge and performance, postulated career fields as a result of that examination, and tested and revised those career fields by more extensive examination. Proposed as a result of this are four career fields: Construction-Vendor, Health Physics, Reactor Operations, and Safeguards; and two "career ladders": Fuel Facilities and Investigation. (The term "career ladder" was chosen to describe the relatively narrow patterns of positions open to its members.) All career fields include subfields, which are described in full in the report. In addition to recommending acceptance of these career fields, this document proposes the combination of certain subfields, the retitling of some positions, and the adoption of a standard nomenclature for all NRC/IE positions.

SUMMARY

GENERAL

This report describes the work performed by the General Research Corporation (GRC) on Task II of a study for the Office of Inspection and Enforcement of the Nuclear Regulatory Commission (NRC/IE). Task II centered on the development of career fields for the Headquarters and regional positions of NRC/IE, and this report is confined to that task. The full report contains the study background, the methodology, the results achieved, and the findings and recommendations of Task II.

TASK OBJECTIVES AND METHODOLOGY

Among the points to be stressed in the development of career fields were opportunities for vertical and lateral progress within the fields and for horizontal and lateral transfer among them; both Headquarters and regional positions were to be included, and the requirements associated with typical moves were to be set forth.

To accomplish these objectives, GRC made a preliminary examination of the data contained in the qualification statements developed in Task I for commonality of knowledge and performance; postulated career fields as a result of that examination; and tested and revised these career fields by a more intensive examination, using—among other data—the results of the hiring qualifications drawn up during Task IV. Those postulated career fields were tested for vertical and lateral mobility. This process yielded final career fields and a layout of the requirements associated with intra- and inter-field mobility.

During the dialogues regarding the formulation of career fields, NRC/IE has made certain personnel decisions. The principal ones impacting on this project were:

- The concept of optimum and minimum levels of knowledge was dropped in favor of a qualified/nonqualified approach—the latter related to the knowledge acquired by the successful completion of an NRC/IE course, wherever that linkage was practicable.

- A general pattern of associating stages of performance with inspector levels was retained.

- This report and the reports on other tasks will stress "where NRC/IE wants to go" rather than "where NRC/IE is."

- The section chief's position was defined as that of a technical supervisor with certain nontechnical responsibilities. When appointed, section chiefs should have, or be able to acquire within a reasonable time, a working knowledge of their expanded areas of responsibility.

- The branch chief's position was defined as that of a manager, more broadly based than the section chief's.

FINDINGS

Four career fields were found advisable: Construction-Vendor, Health Physics, Reactor Operations, and Safeguards. In addition to these, two "career ladders" (a term selected to describe the relatively narrow patterns of their members) are proposed for Fuel Facilities inspectors and for Investigators. During the study, NRC/IE accepted some consolidation of specialties in the Health Physics area; GRC believes more consolidation is possible. Further, GRC recommends the amalgamation of the Construction and Licensee Contractor Vendor areas into a new Construction-Fabrication Career Field. Informal recommendations of GRC regarding consolidation in the Safeguards area were not accepted and are reiterated in the study.

These four career fields and two career ladders cover the NRC/IE professional force and provide mobility to its members, considering the requirements of the positions and the potential for retraining. Some consolidation is advisable, as discussed below and in the report.

RECOMMENDATIONS

GRC recommends that NRC/IE:

- Adopt these career fields and ladders as its career lattice.

- Combine the two subfields in the Health Physics Career Field, and combine the Auditing and Statistics Subfields within the Safeguards Career Field.

- Change the title of the Fuel Facilities Career Ladder to Fuel Processing Career Ladder.

- After making appropriate changes to reflect action on the recommendations just above, accept the Headquarters and regional lists (Appendices D and E, respectively) as the standard position nomenclatures for personnel and training management.

- Establish a standard definition of inspector duties between Reactor Operations Projects/Resident and Nuclear Support inspectors; this will provide an organization-wide basis for training and other personnel actions and may permit consolidation of the two specialties.

TABLE OF CONTENTS

Abstract iii

Summary v

Table of Contents vii

List of Figures ix

Previous Reports xi

1. Background and Objectives 1

2. Methodology 4

3. Career Fields and Ladders 5

General 5

A. Health Physics Career Field 7

B. Safeguards Career Field 14

C. Construction - Vendor Career Field 26

3.1 Construction - Vendor Intrafield Mobility 34

3.2 Construction - Vendor Interfield Mobility 56

D. Reactor Operations Career Field 60

E. Fuel Facilities Career Ladder 65

F. Investigator Career Ladder 67

G. Overall 69

4. Recommendations 79

Appendices

A. Levels of Knowledge and Performance 81

B. Career Field Chart (Sample) 83

C. Mobility Among Positions Chart (Sample) 84

D. Headquarters Positions List 85

E. Regional Positions List 87

F. Special Positions List 90

LIST OF FIGURES

Number	Title	Page
3.1	Health Physics Career Field	8
3.2	Materials Radiological Protection Subfield	10
3.3	Radiation Support/Environmental Subfield	11
3.4	Intrafield Mobility: Health Physics Career Field	12
3.5	Consolidation into a Single-Specialty Health Physics Career Field	13
3.6	Safeguards Career Field	15
3.7	MCA, Auditing Subfield	16
3.8	MCA, Chemistry Subfield	17
3.9	MCA, Statistics Subfield	18
3.10	Security Subfield	19
3.11	Intrafield Mobility: MCA, Auditing-Statistics	21
3.12	Consolidation of MCA, Auditing and Statistics Subfields	22
3.13	Intrafield Mobility: MCA, Chemistry-Auditing/ Statistics	23
3.14	Intrafield Mobility: MCA, Chemistry-Auditing	24
3.15	Intrafield Mobility: MCA, Chemistry-Statistics	25
3.16	Construction-Vendor (C-V) Career Field	28
3.17	Construction, Projects/Resident, Civil Engineering, Geology, and Metallurgy Subfields	29
3.18	Construction-Vendor Electrical and Instrumentation, and Mechanical Engineering Subfields	30
3.19	Vendor, Fuels and Program Evaluation Subfields	31
3.20	Intrafield Mobility: Construction, Projects/ Resident-Civil Engineering	36
3.21	Intrafield Mobility: Construction, Projects/ Resident-Geology	37
3.22	Intrafield Mobility: Construction, Projects/ Resident Metallurgy	38
3.23	Intrafield Mobility: Construction, Civil Engineering-Geology	39
3.24	Intrafield Mobility: C-V, Electrical and Instrumentation-Mechanical Engineering	40
3.25	Intrafield Mobility: Vendor, Fuels-Program Evaluation	41
3.26	Intrafield Mobility: Construction, Projects/ Resident-C-V, Electrical and Instrumentation	42
3.27	Intrafield Mobility: Construction, Projects/ Resident-C-V, Mechanical Engineering	43
3.28	Intrafield Mobility: Construction, Projects/ Resident-Vendor, Fuels	44
3.29	Intrafield Mobility: Construction, Projects/ Resident-Vendor, Program Evaluation	45
3.30	Intrafield Mobility: Construction, Civil Engineering-C-V, Mechanical Engineering	46
3.31	Intrafield Mobility: Construction, Civil Engineering-Vendor, Fuels	47

Number	Title	Page
3.32	Intrafield Mobility: Construction, Civil Engineering-Vendor, Program Evaluation	48
3.33	Intrafield Mobility: Construction, Metallurgy-C-V, Mechanical Engineering	49
3.34	Intrafield Mobility: Construction, Metallurgy-Vendor, Fuels	50
3.35	Intrafield Mobility: Construction, Metallurgy-Vendor, Program Evaluation	51
3.36	Intrafield Mobility: C-V, Electrical and Instrumentation-Vendor, Fuels	52
3.37	Intrafield Mobility: C-V, Electrical and Instrumentation-Vendor, Program Evaluation	53
3.38	Intrafield Mobility: C-V, Mechanical Engineering-Vendor, Fuels	54
3.39	Intrafield Mobility: C-V, Mechanical Engineering-Vendor, Program Evaluation	55
3.40	Interfield Mobility: Vendor, Fuels-Fuel Facilities	57
3.41	Interfield Mobility: Construction, Projects/Resident-Reactor Operations, Projects/Resident	58
3.42	Interfield Mobility: Vendor, Program Evaluation-Reactor Operations, Projects/Resident	59
3.43	Reactor Operations Career Field	61
3.44	Reactor Operations Projects/Resident Subfield	62
3.45	Reactor Operations Nuclear Support Subfield	63
3.46	Fuel Facilities Career Ladder	66
3.47	Investigator Career Ladder	68
3.48	Career Lattice Chart	71
3.49	Health Physics Career Chart	72
3.50	Fuel Facilities Career Chart	73
3.51	Investigator Career Chart	74
3.52	Safeguards Career Chart	75
3.53	Reactor Operations Career Chart	76
3.54	Construction-Vendor Career Chart	77

PREVIOUS REPORTS

The preliminary report on Task I, The Development of Qualification Requirements, appears in three volumes (without NUREG numbers). Only limited distribution was made of this report, since NRC/IE decided to use it as a working document to prepare the revised qualifications statements in the final report on Task I.

The report on Task III, The Assessment of Current NRC/IE Professional Training, is numbered NUREG/CR-0043.

The report on Task IV, Hiring Qualifications, is numbered NUREG/CR-0044.

The final report on Task I, Revised Job/Position Qualifications Manual, is numbered NUREG/CR-0046.

Chapter 1

BACKGROUND AND OBJECTIVES

BACKGROUND

The Nuclear Regulatory Commission (NRC) awarded a contract on August 22, 1977 to the General Research Corporation (GRC) to study certain personnel and training aspects of its Inspection and Enforcement Division (NRC/IE). The title of the study is "Development of Qualification Requirements, Training Programs, Career Plans, and Methodologies for Effective Management and Training of Inspection and Enforcement Personnel."

A variety of causes contributed to the NRC/IE decision to undertake this study: heightened public interest in energy generation, greater public concern regarding the safety and health considerations of nuclear power, increasing problems with compliance and other aspects of licensee performance, and the prospects of fielding a larger force to cope with the aspects noted above and with the projected growth in the nuclear power industry.

To perform this study, GRC joined with three other firms, each with its individual expertise:

University Research Corporation (URC), whose professional staff reinforced the GRC effort in job functions analysis and career latticing.

National Loss Control Service Corporation (NATLSCO), whose technical staff contains engineers of such varied disciplines as electrical, chemical, industrial, and mechanical engineering.

E. R. Johnson Associates (JAI), whose principals operate for the most part in the nuclear field, bringing backgrounds from such areas as chemical and engineering technology and plant management.

During February and March, NRC/IE reviewed thoroughly the Task I report and an earlier draft of this volume. Several key decisions evolved from that process:

- The concept of resting qualifications on the acquisition of minimum and optimum levels of performance and knowledge, as called for in the Request for Proposal and prescribed in Task I, was dropped as too complicated in its execution. Substituted therefor was a simpler qualified/nonqualified approach to knowledge: a thorough understanding of pertinent areas is required of all levels. Moreover, wherever possible, the program subject area was related to the content of an NRC/IE course. (The program subject areas which are non-NRC/IE course related are defined in the Technical Lexicon of Program Subject Areas, which is Appendix E to the report on Task III.)

- A general pattern of associating stages of performance with inspector levels was retained. The four stages—expert knowledge, thorough understanding, working knowledge, and general familiarity—are described in Appendix A. An Assistant Inspector should be acquiring a working knowledge in those performance areas pertinent to his position. An Inspector is one who has acquired a working knowledge of those topics, and is now acquiring a thorough understanding of them. A Senior Inspector will have acquired that thorough understanding. The expert level will generally be expected of the Headquarters, NRC/IE, staff member who specializes in the subject under consideration.

- NRC/IE, in this report and in the reports on later tasks, has elected to state "where it wants to go" rather than "where it is." This report, therefore, reflects decisions made as a result of considering Task I data rather than being based directly on the data.

- The section chief was defined as a technical supervisor with certain nontechnical responsibilities. As noted above, a Senior Inspector has a thorough understanding of the pertinent areas of knowledge required by his position. To move to the section chief position in another specialty, the Senior Inspector must be able to acquire, within a reasonable time, a working knowledge of the appropriate areas of knowledge in his new position. The length of that "reasonable time" depends upon the breadth and complexity of the required knowledge.

- The branch chief's position was defined as that of a manager, more broadly based than the section chief's. Branch chiefs, it was determined, must have served at Headquarters, NRC/IE, sometime during their careers, prior to their appointment.

OBJECTIVES

The primary objective of Task II was to develop a comprehensive career plan for the 144 job/position classification areas developed in Task I. Four inspector levels were to be introduced: Intern, Assistant Inspector, Inspector, and Senior Inspector. Opportunities for progression upward and for lateral mobility were to be displayed.

During Task I, NRC/IE staff members had asked also that GRC attempt to consolidate position titles; GRC, therefore, informally incorporated this as an added objective. The GRC proposals for consolidation, however, were more than offset by the NRC/IE increases in positions which resulted from questions posed during the study. There are now 168 positions (71 Headquarters and 97 regional).

Chapter 2

METHODOLOGY

The basic step in formulating career plans was the identification of career fields. From the data in Volume I covering the regional positions, commonality among program subject areas was identified. This was refined by using the new, more detailed list of program subject areas drawn up by NRC/IE and GRC during the extensive review of Task I data and the preparation of Task IV. Based on the overlaps identified, tentative career fields were formed and then tested against the full scope of knowledge and performance requisite to a position. Several iterations of this procedure yielded career fields which were firm enough to serve as a basis for the next phase.

This phase involved first checking the data on the Headquarters, NRC/IE, positions for their compatibility with the postulated career fields. Where they were not compatible, the career fields were reexamined and adjusted as required. The last step in this phase entailed mapping of positions within the career fields against the top three inspector levels (all but Intern), against the supervisory level, and against the three levels of management. The level-and-job format used to display results is at Appendix B. (A completed format appears in Chapter 3 for each career field or subfield.)

Built into this process were assurances of full horizontal movement among positions within the inspector levels and the supervisory level and of full access to all positions at the next higher rung. Since such movement depends so greatly on technical competence, career subfields had to be created. NRC/IE desires for specialty identification further increased the number of these subfields. They appear, therefore, in every career field.

The last phase was a perusal of all career fields to locate opportunities for horizontal and lateral movement within and among them. This involved first a reexamination of the program subject areas. Then, if applicable, other knowledge and performance requisites associated with each position were examined. The goal was mobility within and among career fields, within the bounds of common sense and reasonable retraining.

It was not a static process; the career fields themselves were open to challenge and change if they overly limited opportunities for movement. The results of this analysis of the program subject areas have been graphically displayed according to the sample format in Appendix C. (Completed formats appear in Chapter 3 of the report, where applicable.)

Chapter 3

CAREER FIELDS AND LADDERS

GENERAL

The methodology described in Chapter 2 worked well. Four career fields were formed: Health Physics, Safeguards, Construction-Vendor, and Reactor Operations. There were two career areas, Fuel Facilities and Investigator, which were too narrow in scope and too small in population to be termed career fields. Therefore, these two areas have been termed "career ladders."

The Headquarters, NRC/IE, positions are listed in Appendix D; the regional positions are at Appendix E. Thirteen positions were identified as requiring common skills and, therefore, open to all inspectors at appropriate levels. They appear in every career field and ladder. Of these, three (all in the Headquarters) were at the mid- and first-levels of management; five (four in the Headquarters, one in the regions) were at the supervisory level; two (both in the Headquarters) were at the Senior Inspector level; and three (all in the Headquarters) were at the Inspector level. These are listed in Appendix F as Specialty-Immaterial Positions.

There are seven positions which did not fit into the NRC/IE career planning scheme. They involve specialties which either are not normally available in the inspector force or do not offer appropriate professional development. Therefore, they have not been included in any career field or ladder. These are listed in Appendix F as Excluded Positions.

This chapter is organized into seven sections. The first six cover the career fields and ladders:

Section A Health Physics
Section B Safeguards
Section C Construction-Vendor
Section D Reactor Operations
Section E Fuel Processing (Ladder)
Section F Investigator (Ladder)

Each section presents a full picture of that career field or ladder: opportunities for progress within the field are displayed in the charts, and opportunities for lateral transfer between career subfields and among career fields are discussed. In reviewing these progress charts (the first one appears on page 8), it is important to realize that all positions at a particular level are open to a career field member.

Section G is the eighth section. It includes a detailed sheet for each career field and ladder, listing all the available positions, by career subfield where applicable. It also includes an overall chart covering NRC/IE in total.

Section A

HEALTH PHYSICS CAREER FIELD

The Health Physics Career Field, shown in detail at Figure 3.1, retains one of the three current specialties as a career subfield—Materials Radiological Protection (Figure 3.2). It combines the other two into a second career subfield—Radiation Support/Environmental (Figure 3.3).

The organization of these activities differs greatly from region to region. Some have a workload that may require continued separation of the radiation support and environmental functions; others have been able to merge all three functions into a single section. But the reduction of three specialties to two will help in the selection, training, and assignment processes. In this connection, the section chief who comes from one subfield is expected to acquire a working knowledge of the new program subject areas within 12 months.

Displayed at Figure 3.4 are the increases in knowledge required to move from one subfield to the other in the Health Physics Career Field. Because they are modest changes, GRC had informally recommended the consolidation of all three specialties into a single career field to be titled Health Physics Inspector; NRC/IE, however, accepted only the partial consolidation described above. GRC adheres to its original recommendation for full consolidation. Figure 3.5 lays out the major acquisitions of knowledge required to merge the Materials Radiological Protection subfield with the new, combined Radiation Support/ Environmental subfield. These are closely related program subject areas, and the well motivated inspector should be able to attain the levels shown. NRC/IE management would gain flexibility by the consolidation of this career field, and the members of the career field would have broader opportunities.

In the figures which follow, one of three adjectival ratings is assigned to each transfer: practical, difficult, or impractical. Practical describes those shifts which can be made with relative ease, making maximum use of NRC/IE courses; generally, the disciplines place similar requirements on their members. Difficult is the description of those transfers requiring more training which is non-NRC/IE course related and acquiring more of a change in fundamental discipline. Impractical is used to describe those shifts which are most costly; they call for reeducation in a new and different scientific or engineering discipline and the acquisition of a thorough knowledge of the areas of application in that new discipline.

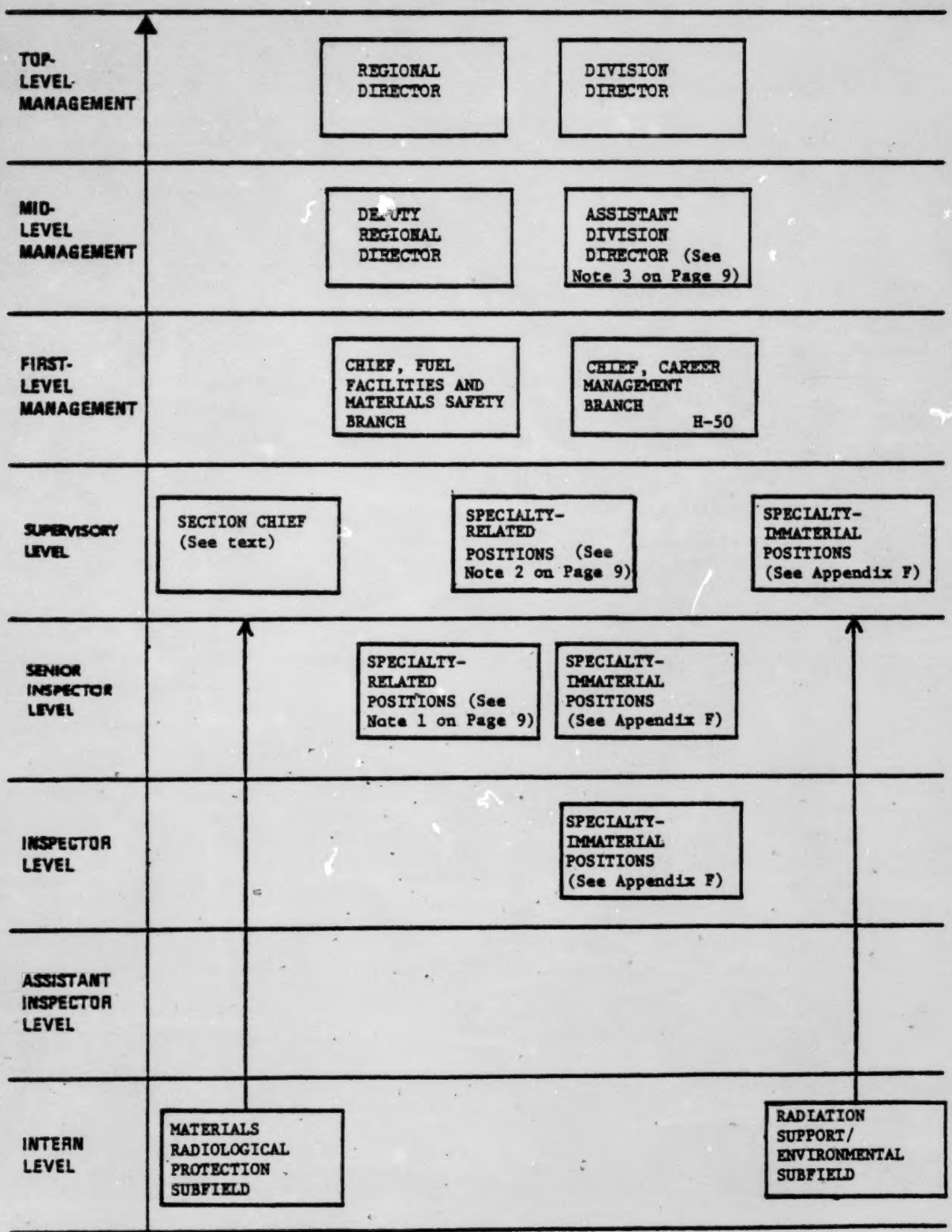

TOP-LEVEL MANAGEMENT
REGIONAL DIRECTOR
DIVISION DIRECTOR
MID-LEVEL MANAGEMENT
DEPUTY REGIONAL DIRECTOR
ASSISTANT DIVISION DIRECTOR (See Note 3 on Page 9)
FIRST-LEVEL MANAGEMENT
CHIEF, FUEL FACILITIES AND MATERIALS SAFETY BRANCH
CHIEF, CAREER MANAGEMENT BRANCH H-50
SUPERVISORY LEVEL
SECTION CHIEF (See text)
SPECIALTY-RELATED POSITIONS (See Note 2 on Page 9)
SPECIALTY-IMMATERIAL POSITIONS (See Appendix F)
SENIOR INSPECTOR LEVEL
SPECIALTY-RELATED POSITIONS (See Note 1 on Page 9)
SPECIALTY-IMMATERIAL POSITIONS (See Appendix F)
INSPECTOR LEVEL
SPECIALTY-IMMATERIAL POSITIONS (See Appendix F)
ASSISTANT INSPECTOR LEVEL
INTERN LEVEL
MATERIALS RADIOLOGICAL PROTECTION SUBFIELD
RADIATION SUPPORT/ ENVIRONMENTAL SUBFIELD

Fig. 3.1—Health Physics Career Field

1. The positions shown below are open to members of the appropriate subfield:

   Staff Specialist-Radiation Support/Environmental (H-43)*
   Staff Specialist-Materials Radiological Protection (H-45)

   *The numbers in the parentheses correspond to those in the master Headquarters list at Appendix D.

2. The positions shown below are open to members of the appropriate subfield:

   Senior Staff Specialist-Radiation Support/Environmental (H-42)
   Senior Staff Specialist-Materials Radiological Protection (H-44)

3. This title includes the Executive Officer for Management and Analysis (H-48) and the Executive Officer for Operations Support (H-63) for all career fields and ladders.

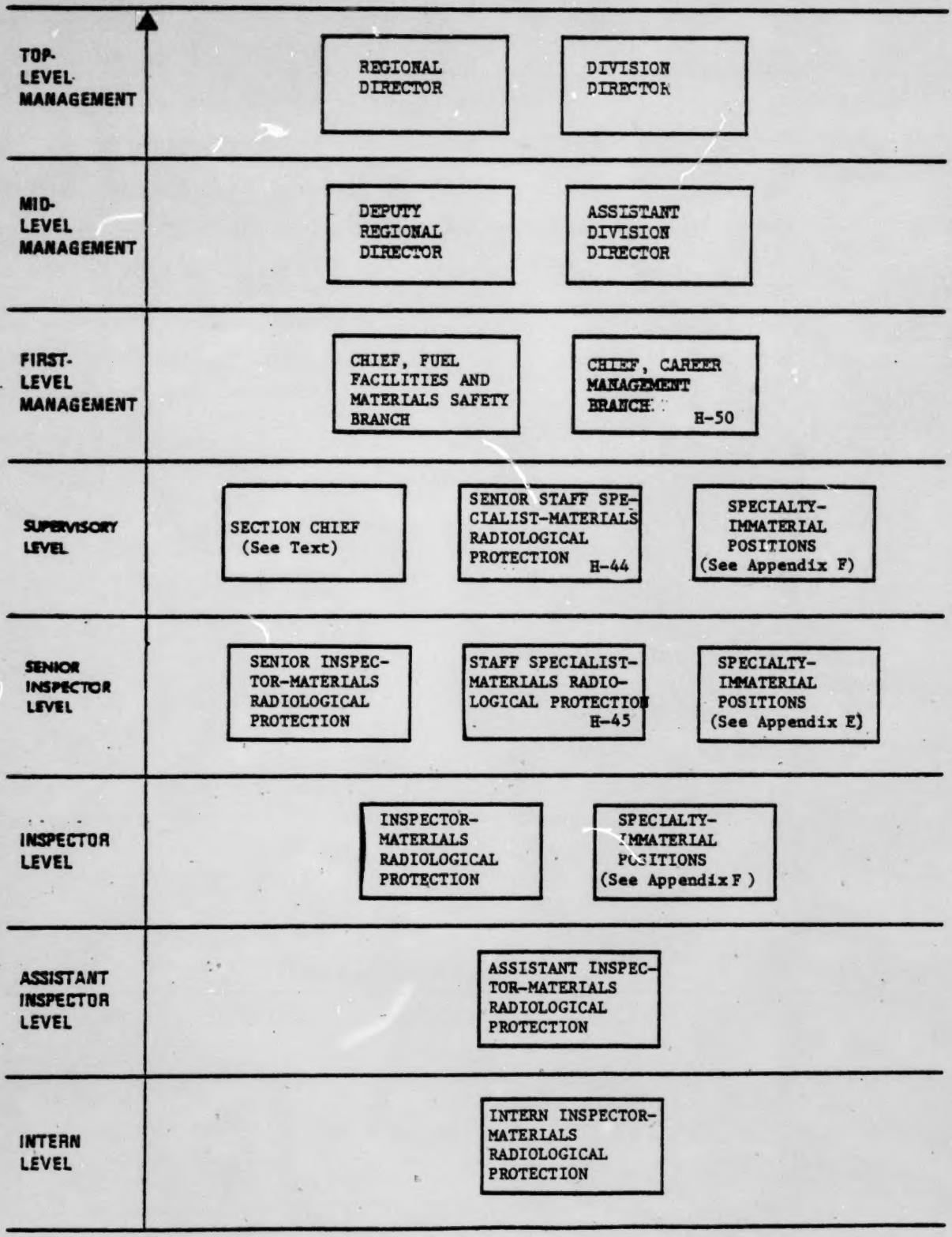


Fig. 3.2—Materials Radiological Protection Subfield

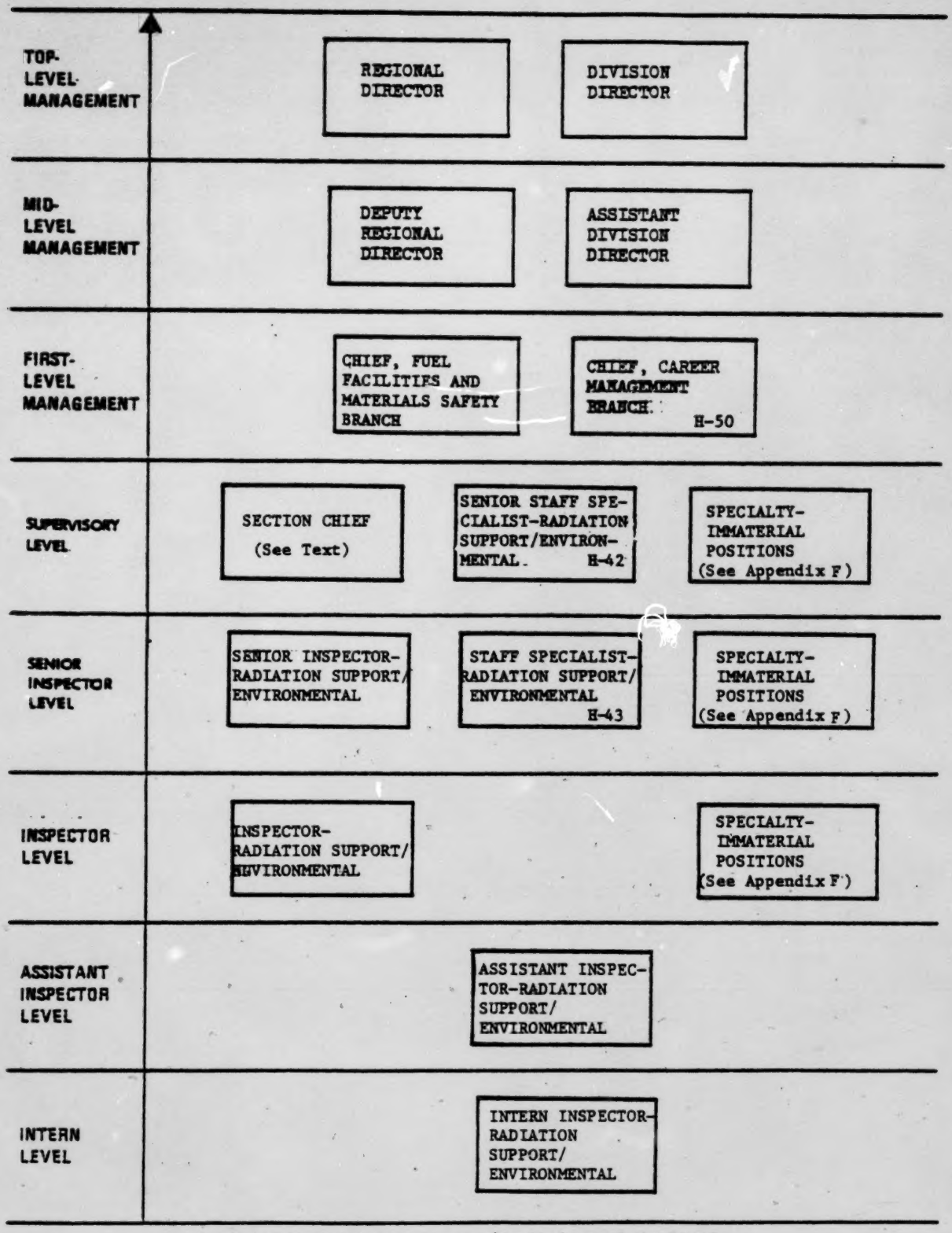
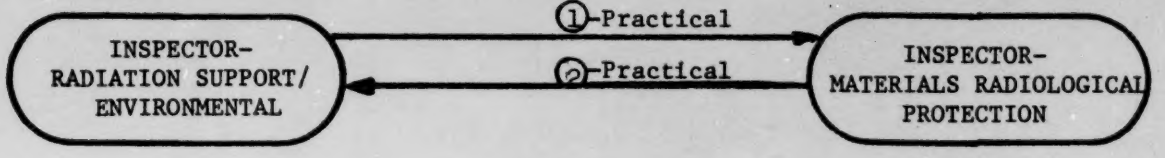
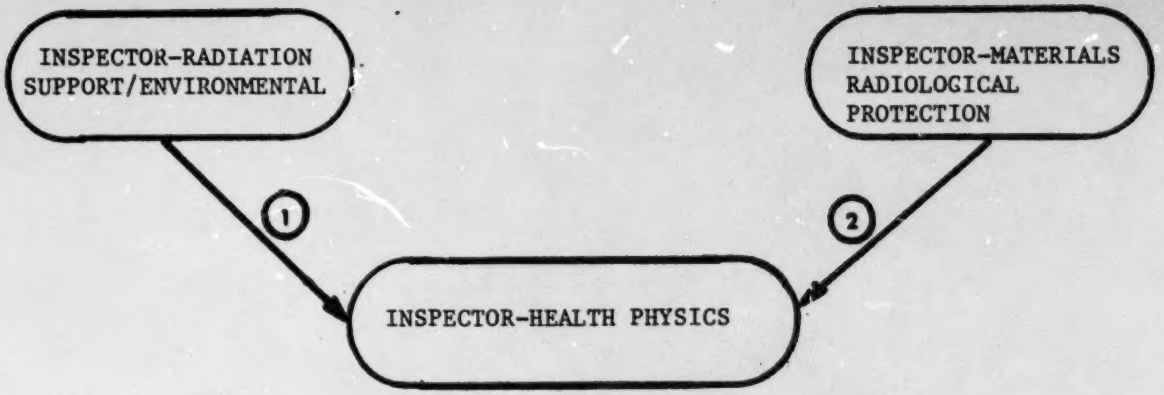


Fig. 3.3—Radiation Support/Environmental Subfield



MOBILITY PATH	①	②
PROGRAM SUBJECT AREAS NECESSARY FOR MOVEMENT	Acquire a thorough understanding of: Radiology (Academic Applications) Radiology (Industrial Applications) Radiology (Medical Applications)	Acquire a thorough understanding of: Environmental Monitoring Nonradiological Environmental Effects Successfully complete the following NRC/IE courses: BWR and PWR Fundamentals BWR/PWR Radwaste

Fig. 3.4—Intrafield Mobility: Health Physics Career Field



MOBILITY PATH	①	②
PROGRAM SUBJECT AREAS NECESSARY FOR CONSOLIDATION	Acquire a thorough understanding of: Radiology (Academic Applications) Radiology (Industrial Applications) Radiology (Medical Applications)	Acquire a thorough understanding of: Environmental Monitoring Nonradiological Environmental Effects Successfully complete the following NRC/IE courses: BWR and PWR Fundamentals BWR/PWR Radwaste

Fig. 3.5—Consolidation into a Single-Specialty Health Physics Career Field

Section B

SAFEGUARDS CAREER FIELD

The Safeguards Career Field displayed at Figure 3.6 has four subfields: Auditing, Chemistry, Statistics—all three related to Material Control and Accounting—and Security. These are displayed at Figures 3.7, 3.8, 3.9, and 3.10, respectively. (Notes for Figures 3.6 through 3.10 appear on Page 20.)

There are two changes from the present arrangement. First is the replacement of the former title of Physical Security by Security; the latter describes better the expanded functions which, GRC is informed, members of this subfield will be undertaking. The second is the clear separation of the Investigator positions from the Safeguards Career Field.

During the study, GRC recommended combining the two career subfields of Auditing and Statistics; this move, however, was informally rejected by NRC/IE. GRC still believes this to be advisable. Figure 3.11 displays the mobility between the two subfields. Figure 3.12 lays out the major acquisitions of knowledge required for merger—and they are few. Safeguards inspectors interviewed during Task I indicate a need to know much in their colleagues' areas if they are to do their jobs well; they have, accordingly, already begun, on their own, to expand their areas of knowledge. Moreover, GRC research during Task IV indicates that there is no problem in hiring quantitatively trained business graduates who will already have a sound basis in statistics.

Displayed at Figure 3.13 is the mobility between the Chemistry Subfield and the proposed Auditing/Statistics Subfield. At Figures 3.14 and 3.15, respectively, are displayed the requirements associated with moves between the Chemistry-Auditing and Chemistry-Statistics Subfields, as they are presently constituted. Movement from the Chemistry to the Statistics Subfield is practical, for that latter subject should have been part of the chemist's education; movement to Auditing is difficult, because the area, although not complex, is new. For the typical auditor or statistician, the requirement to master the discipline of chemistry or chemical engineering makes impractical a move in that direction. Transfers between any MCA subfield and the Security Subfield are impractical.

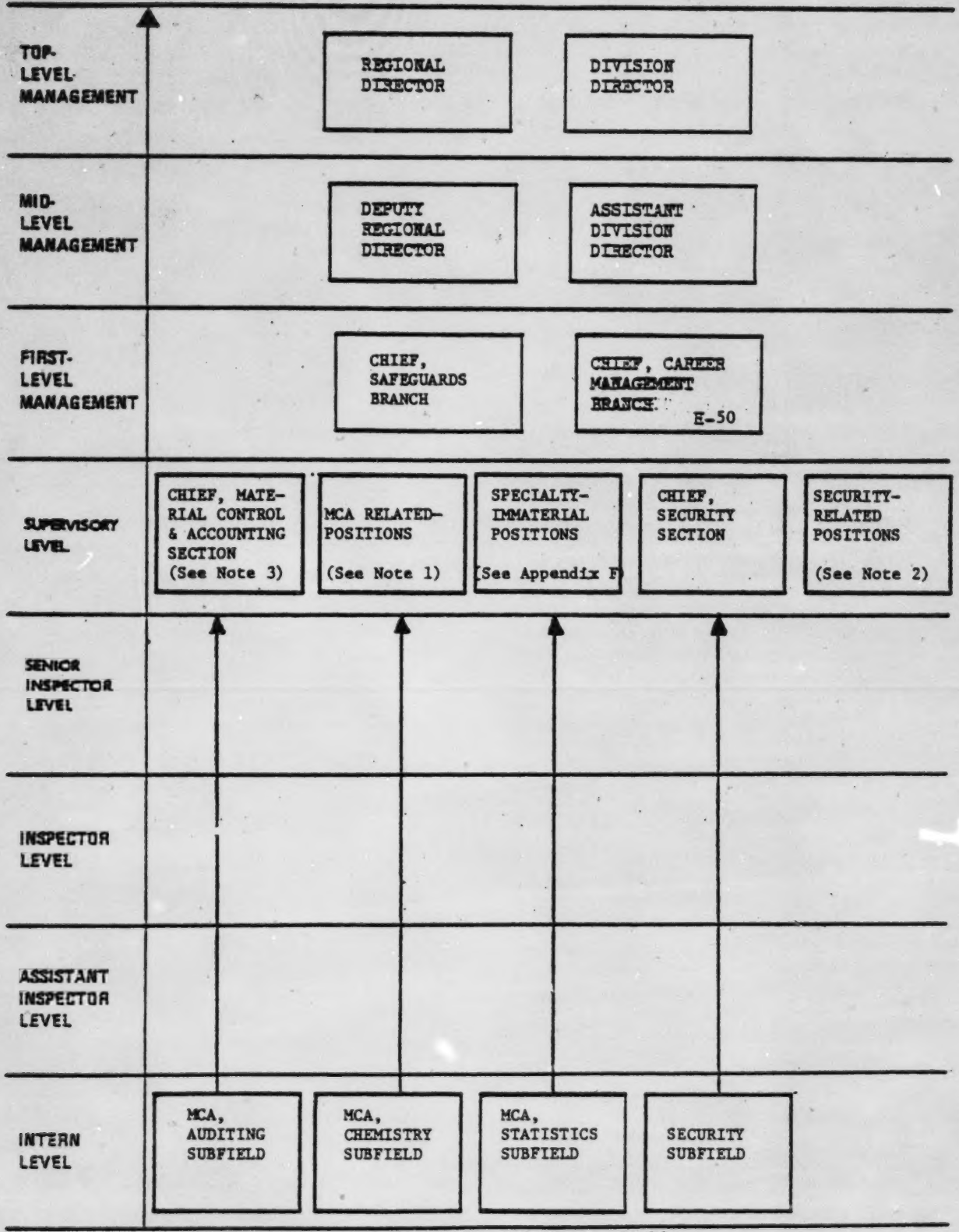


Fig. 3.6—Safeguards Career Field

27

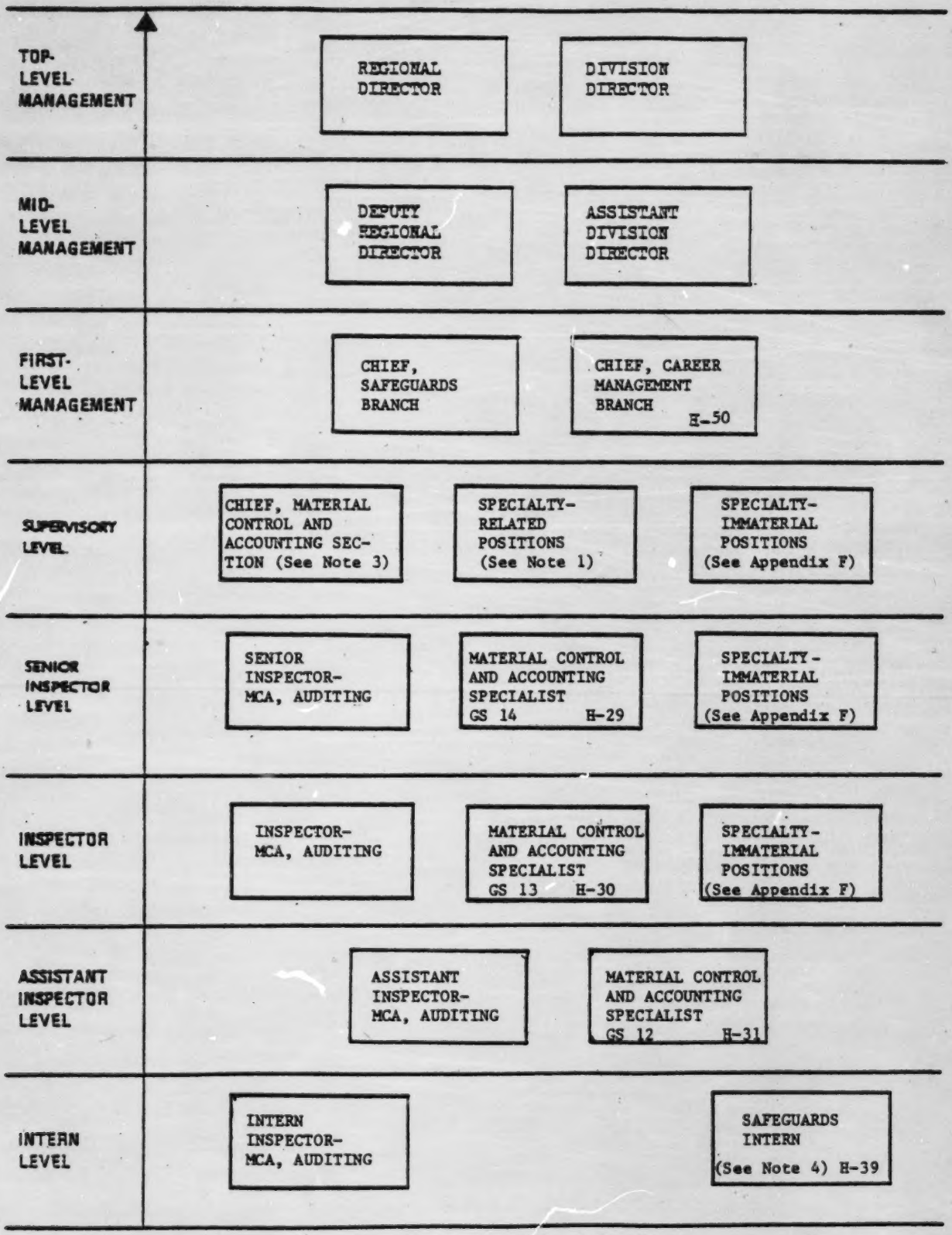


Fig. 3.7—MCA, Auditing Subfield

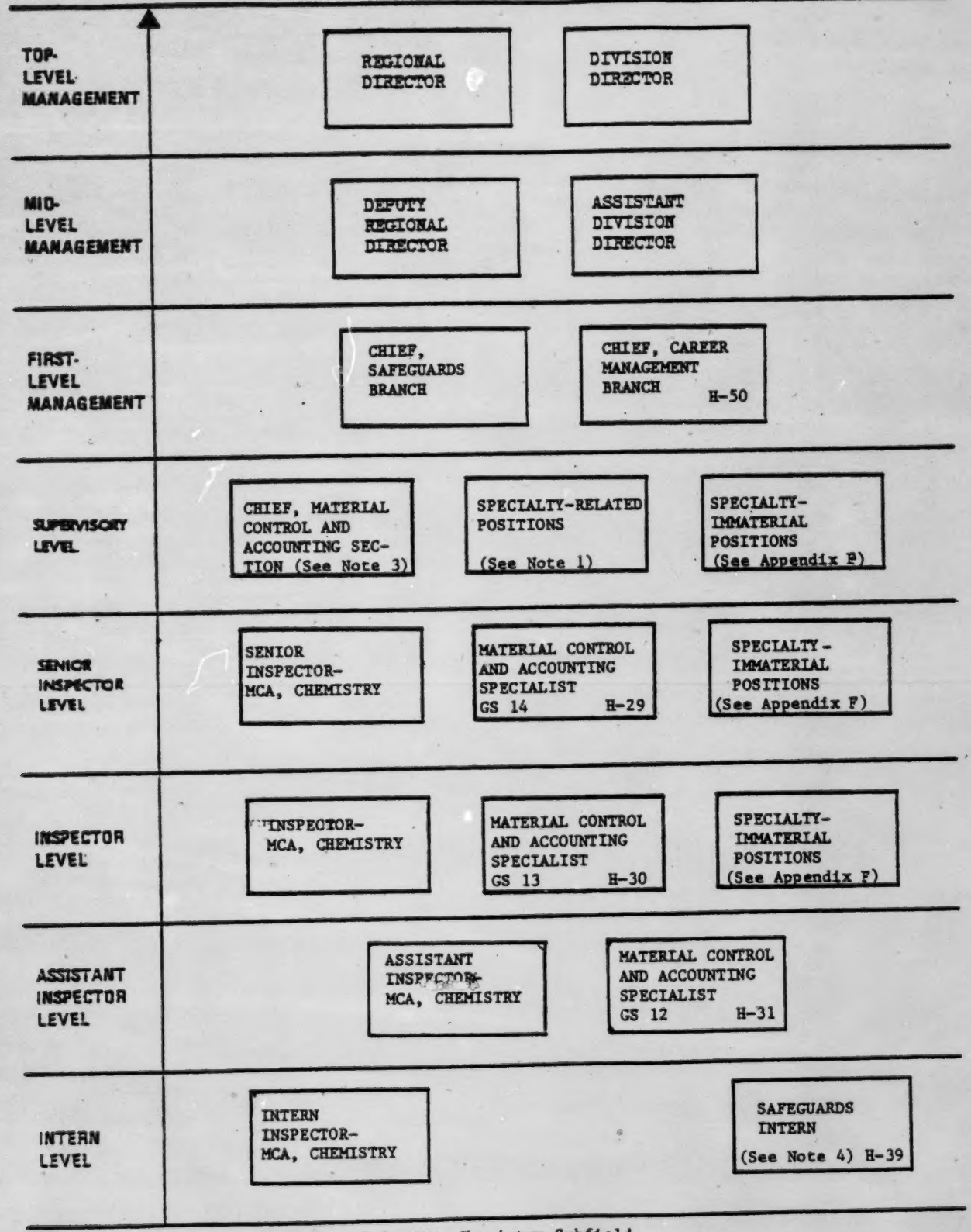


Fig. 3.8—MCA, Chemistry Subfield

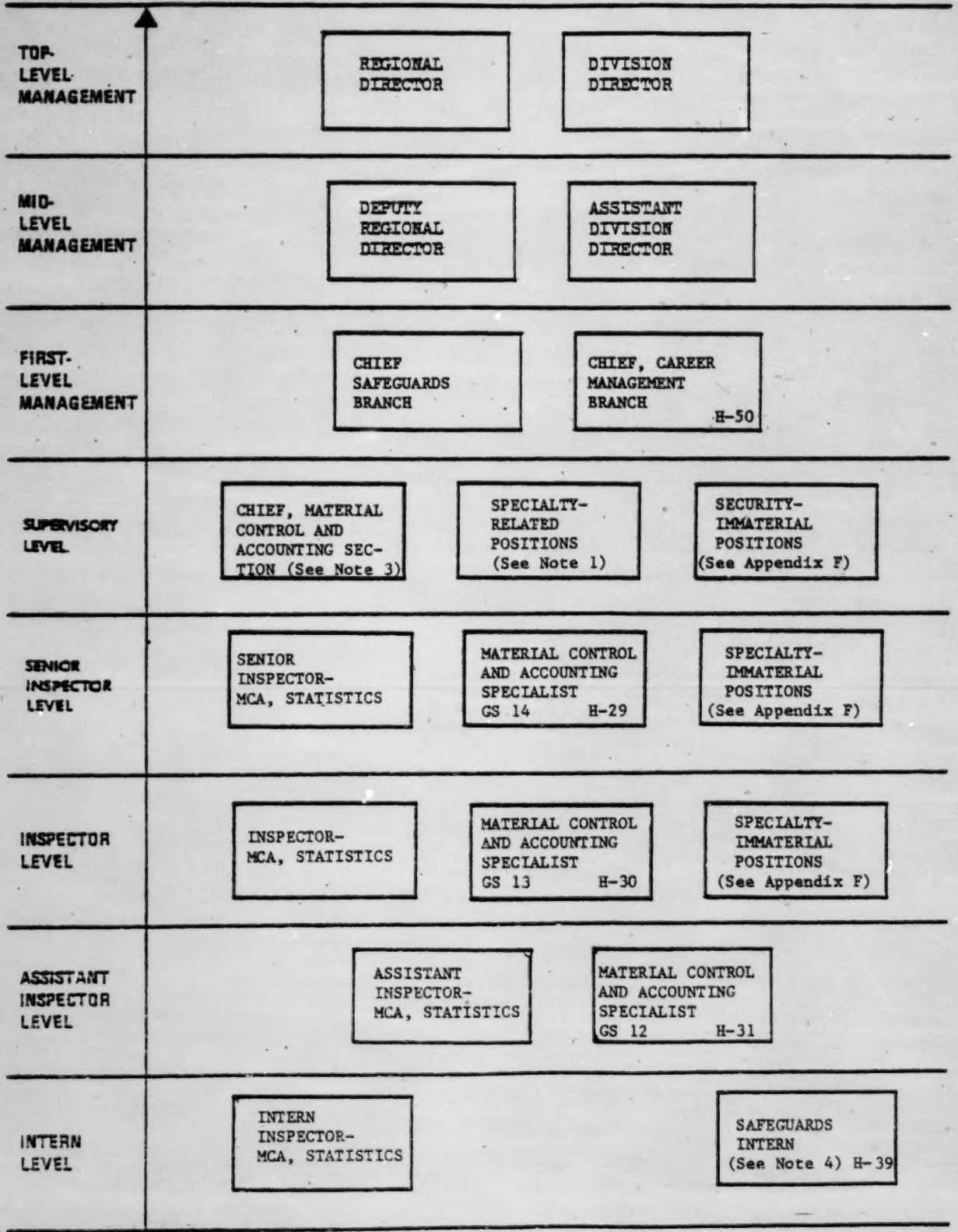


Fig. 3.9—MCA, Statistics Subfield

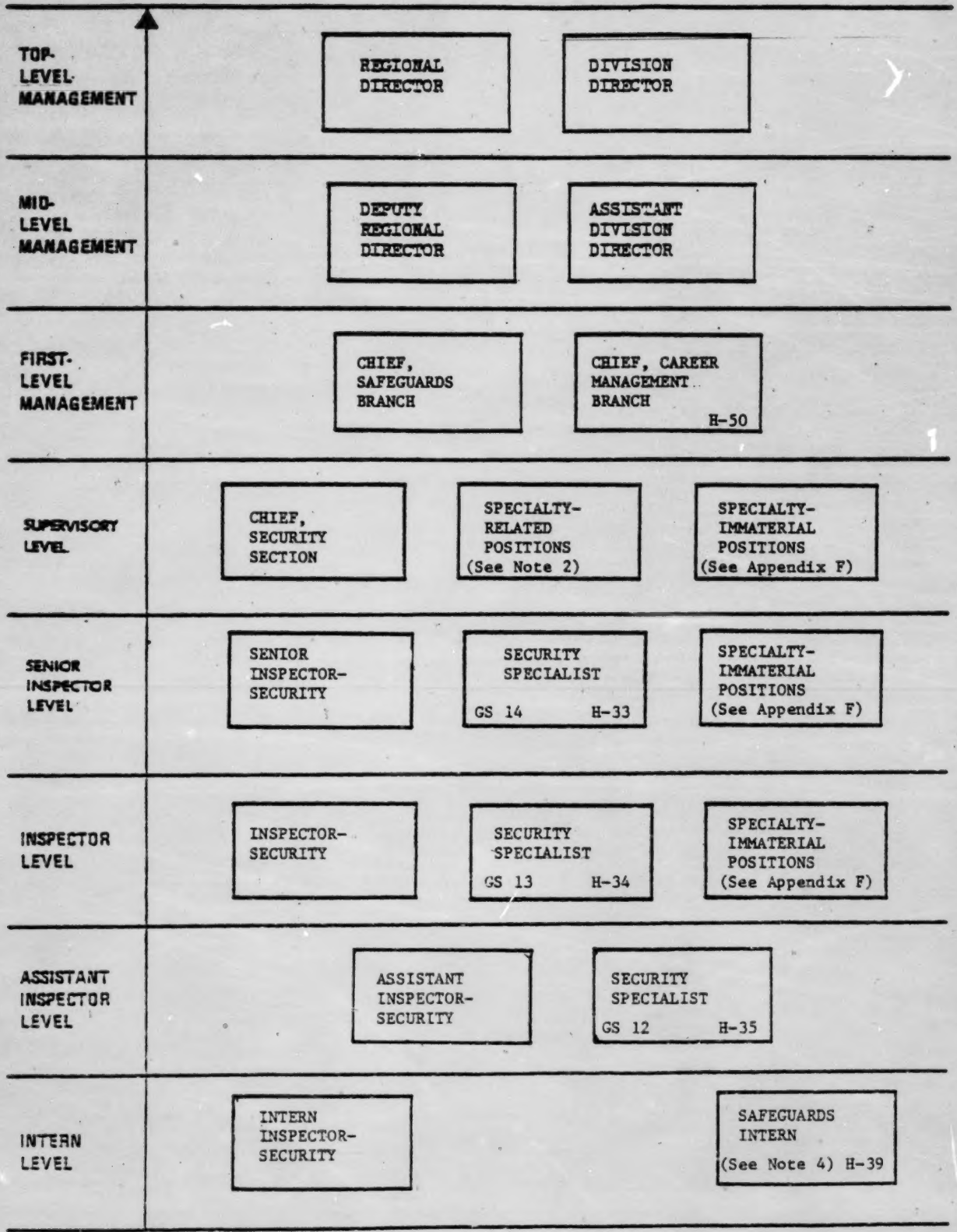
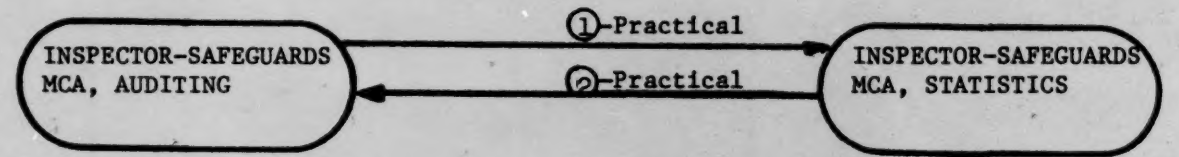


Fig. 3.10—Security Subfield

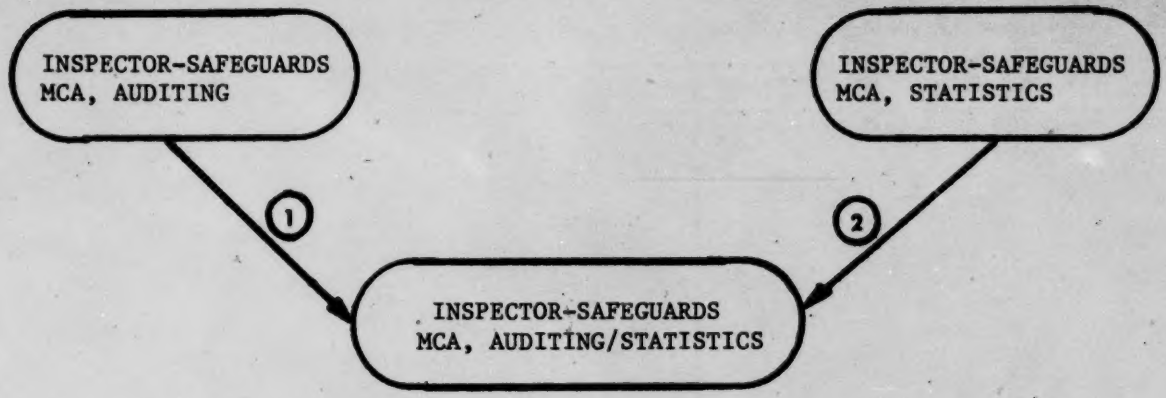
SAFEGUARDS CAREER FIELD NOTES

FIGURE	NOTE	
3.6-3.9	1.	Senior Safeguards Specialist (H-27) (also in Security Subfield) Senior Material Control and Accounting Specialist (H-28)
3.6, 3.10	2.	Senior Safeguards Specialist (H-27) (also in the three MCA subfields) Senior Security Specialist (H-32)
3.6-3.9	3.	When appointed, the Chief, Material Control and Accounting Section, is to have a thorough understanding of the program subject areas of one of these three MCA subfields. At least a working knowledge of the program subject areas of the other two subfields is to be attained within 12 months of appointment.
3.7-3.10	4.	The Safeguards Intern position (H-39), recently created at NRC/IE Headquarters, is open to all four subfields.



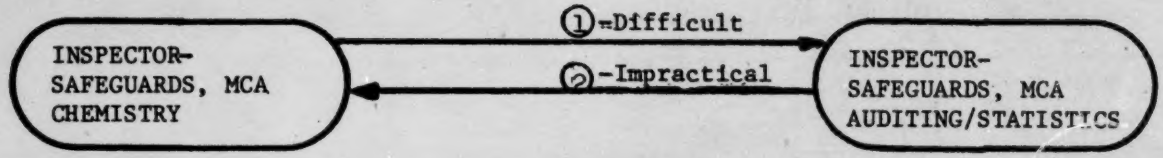
MOBILITY PATH	①	②
PROGRAM SUBJECT AREAS NECESSARY FOR MOVEMENT	Acquire a thorough understanding of: Statistical Theory	Acquire a thorough understanding of: Theory of Accounting and Auditing

Fig. 3.11—Intrafield Mobility: MCA, Auditing-Statistics



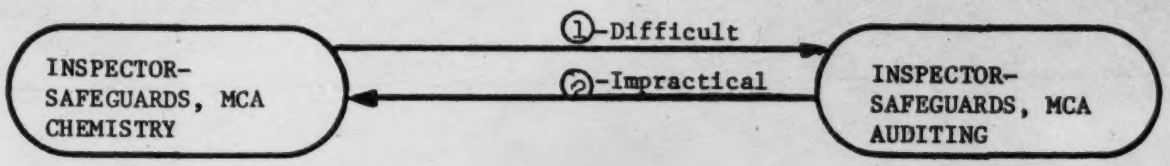
MOBILITY PATH	①	②
PROGRAM SUBJECT AREAS NECESSARY FOR CONSOLIDATION	Acquire a thorough understanding of: Statistical Theory	Acquire a thorough understanding of: Theory of Accounting and Auditing

Fig. 3.12—Consolidation of MCA, Auditing and Statistics Subfields



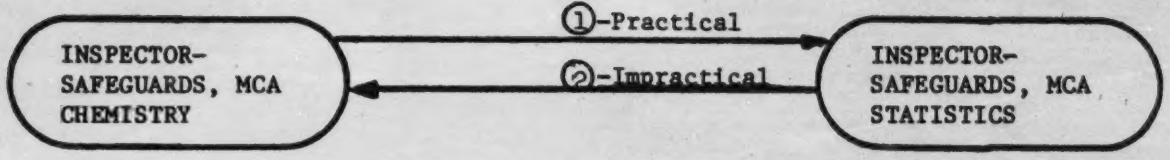
MOBILITY PATH	①	②
PROGRAM SUBJECT AREAS NECESSARY FOR MOVEMENT	Acquire a thorough understanding of: Statistical Theory Theory of Accounting and Auditing	Acquire a thorough understanding of: Material Control and Accounting (Beyond Basic Concepts) Theory of Chemistry

Fig. 3.13-Intrafield Mobility: MCA, Chemistry-Auditing/Statistics



MOBILITY PATH	①	②
PROGRAM SUBJECT AREAS NECESSARY FOR MOVEMENT	Acquire a thorough understanding of: Theory of Accounting and Auditing	Acquire a thorough understanding of: Theory of Chemistry Material Control and, Accounting (Beyond Basic Concepts)

Fig. 3.14-Intrafield Mobility: MCA, Chemistry-Auditing



MOBILITY PATH	①	②
PROGRAM SUBJECT AREAS NECESSARY FOR MOVEMENT	Acquire a thorough understanding of: Statistical Theory	Acquire a thorough understanding of: Material Control and Accounting (Beyond Basic Concepts) Theory of Chemistry

Fig. 3.15-Intrafield Mobility: MCA, Chemistry-Statistics

Section C

CONSTRUCTION-VENDOR CAREER FIELD

The Construction-Vendor (C-V) Career Field, displayed at Figure 3.16, has eight subfields. There are four exclusively in the construction area: Projects/Resident, Civil Engineering, Geology, and Metallurgy; they are displayed at Figure 3.17. There are two which bridge the construction and vendor inspection area: Electrical and Instrumentation, and Mechanical Engineering; both are shown at Figure 3.18. Finally, there are two exclusively in the vendor inspection area: Fuels, and Program Evaluation; both are shown at Figure 3.19. (Notes for all four figures are on page 32.)

The display does not include the Quality Assurance Subfield, although this specialty is represented today in certain Construction Engineering Support Sections. Research revealed, and all interviews confirmed, that this is an area of which every inspector—regardless of career field—must have a thorough understanding. GRC recommends, therefore, that quality assurance not be a career subfield, but rather be an essential element of an inspector's or staff member's knowledge.

Increasing the potential for transfer among these subfields was a major purpose of the NRC/IE revision of these position qualifications. In the tables and figures which follow, the adjectival ratings described on page 7 are used: practical, difficult, and impractical. It is possible to measure, in dollars and manpower, the costs for many of these shifts, particularly those which involve the completion of NRC/IE courses. However, the requirement for thorough understanding of a particular engineering or scientific discipline is measured far less easily: thorough understanding equates to that comprehension expected of a degree holder whose academic know-how has been honed by experience. Moreover, there is a spillover between certain disciplines, e.g., between those of mechanical engineering and of metallurgy. Some subjectivity is, therefore, required.

Potential for transfer among subfields or fields depends, of course, upon both the requirements of the positions and the qualifications of the individual. There will be individuals for whom transfers will be easier than these ratings indicate. Such an exception, for example, would be a Construction, Projects/Resident inspector who holds a degree in geology. Obviously, a move to the position of Construction, Geology inspector on the part of this individual is not impractical, since he has already learned the theory behind his new area.

Table 3.1 summarizes 40 of the 56 transfer possibilities within the C-V Career Field. Of these, 11 are adjudged to be practical, 12 difficult, and 17 impractical. The remaining 16 (of which 10 involve the Geology Subfield) are considered to be impractical.

Table 3.2 illustrates three of the very limited transfer possibilities between the C-V Career Field and other fields. All are deemed to be impractical. Figure 3.40 shows that the similarity between Fuels inspector and Fuel Facilities inspector exists in name only. The transfer from the Construction, Projects/Resident inspector position to Reactor Operations is clearly impractical, as Figure 3.41 displays; transfer from any other C-V subfield to Reactor Operations would, therefore, be at least as impractical. Movement from the Vendor, Program Evaluation to the Reactor Operations Career Field is equally out of consideration, as Figure 3.42 reveals.

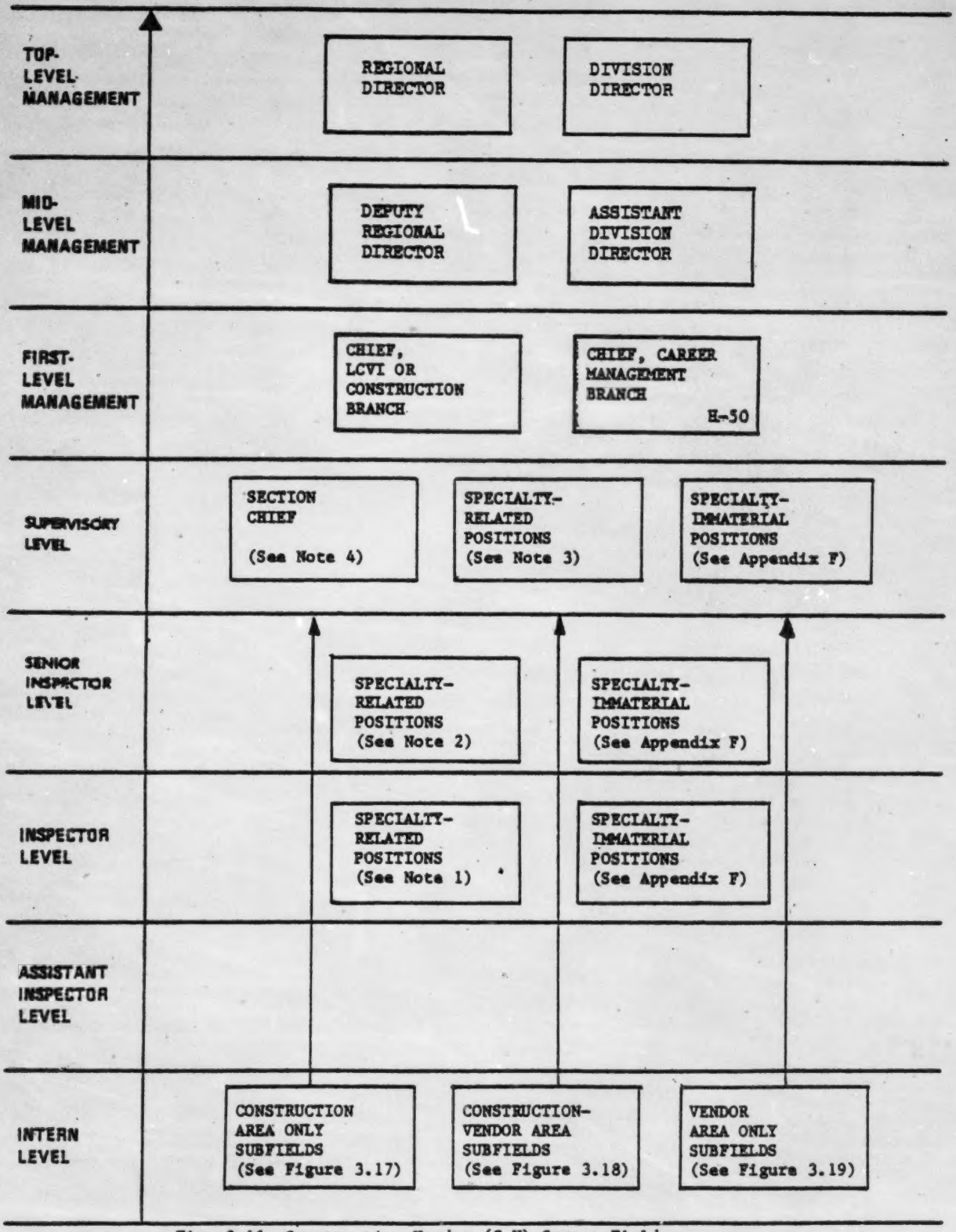


Fig. 3.16—Construction-Vendor (C-V) Career Field

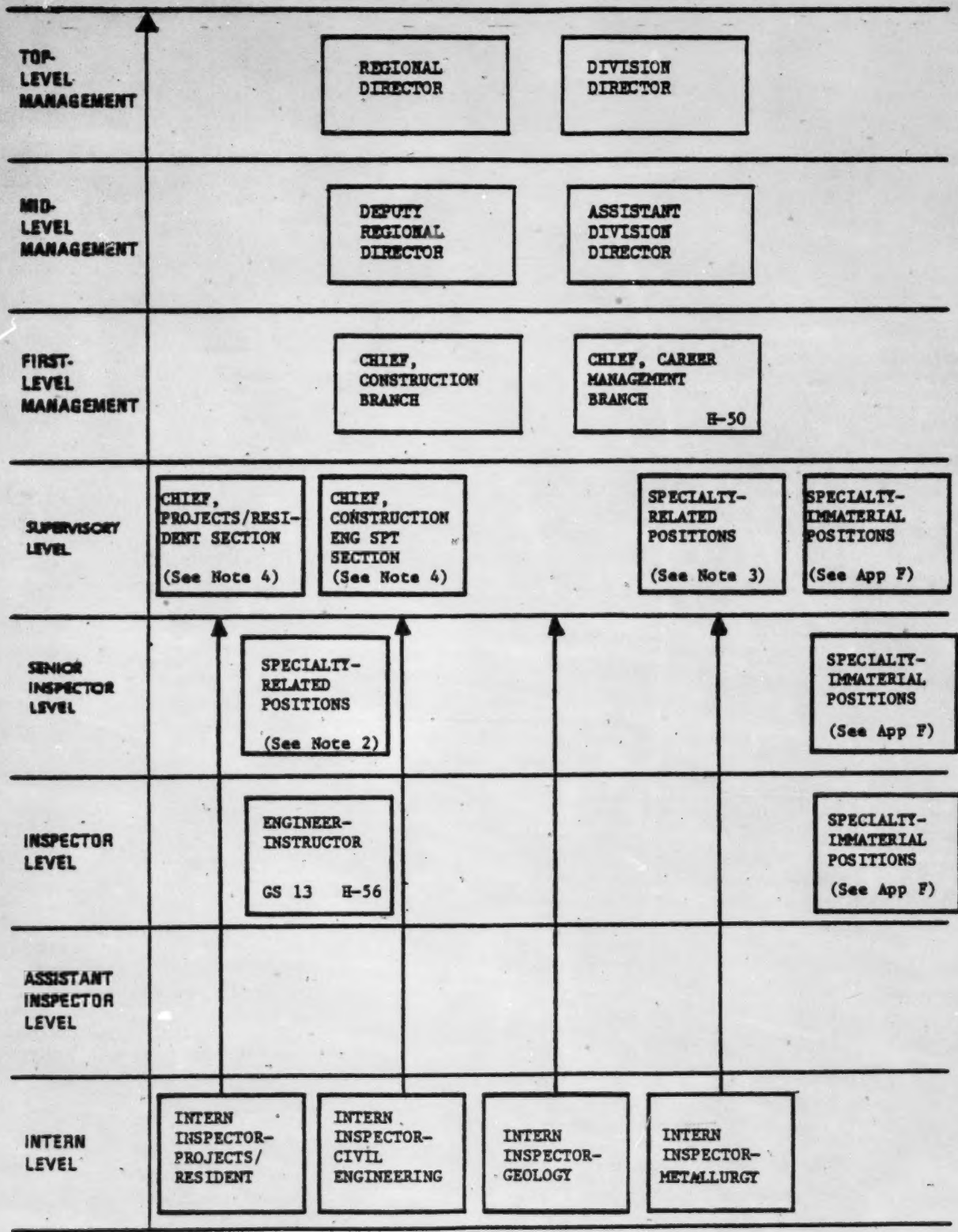


Fig. 3.17—Construction, Projects/Resident, Civil Engineering, Geology, and Metallurgy Subfields

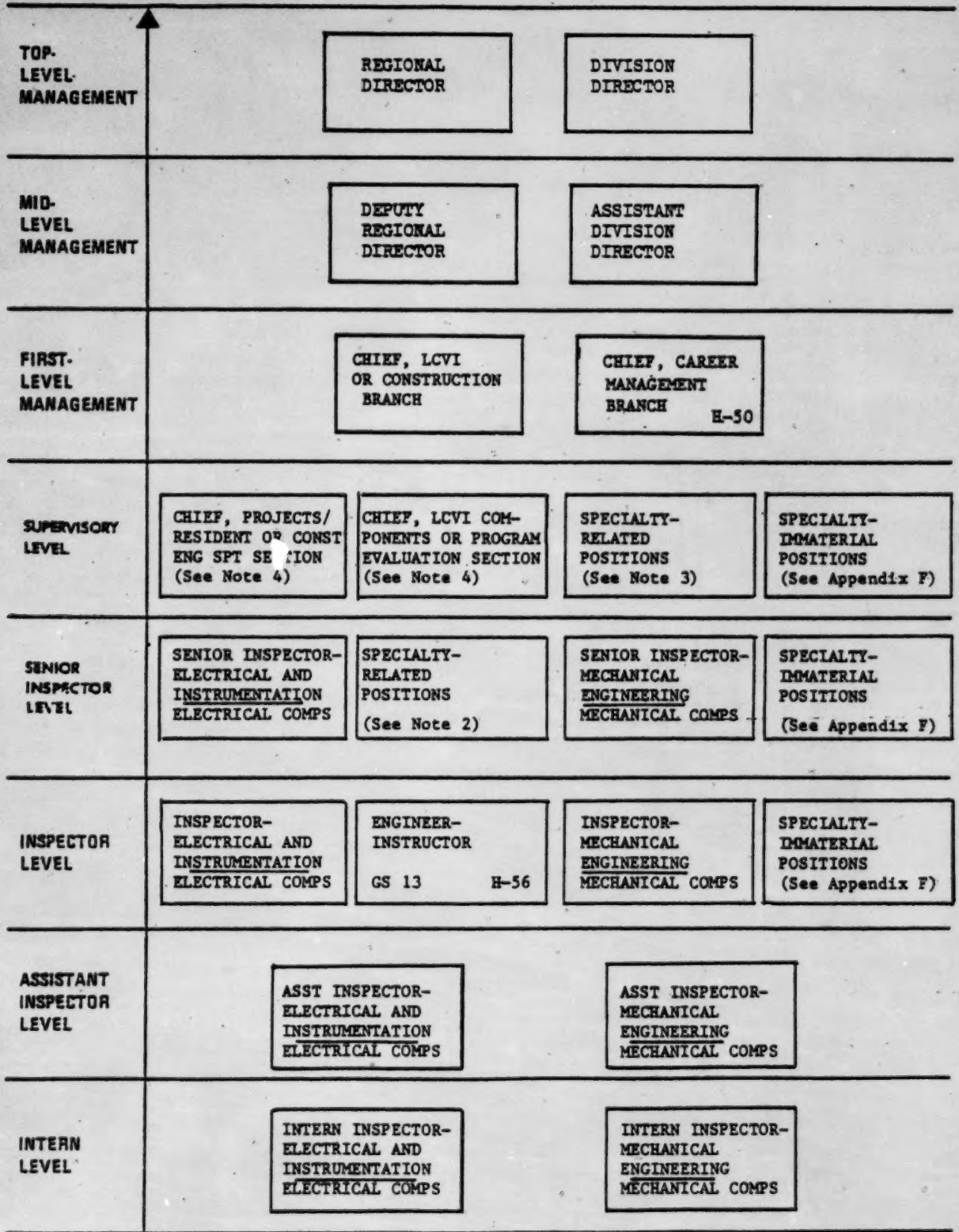

TOP-LEVEL MANAGEMENT
REGIONAL DIRECTOR
DIVISION DIRECTOR
MID-LEVEL MANAGEMENT
DEPUTY REGIONAL DIRECTOR
ASSISTANT DIVISION DIRECTOR
FIRST-LEVEL MANAGEMENT
CHIEF, LCVI OR CONSTRUCTION BRANCH
CHIEF, CAREER MANAGEMENT BRANCH H-50
SUPERVISORY LEVEL
CHIEF, PROJECTS/ RESIDENT OR CONST ENG SPT SECTION (See Note 4)
CHIEF, LCVI COMPONENTS OR PROGRAM EVALUATION SECTION (See Note 4)
SPECIALTY-RELATED POSITIONS (See Note 3)
SPECIALTY-IMMATERIAL POSITIONS (See Appendix F)
SENIOR INSPECTOR LEVEL
SENIOR INSPECTOR-ELECTRICAL AND INSTRUMENTATION ELECTRICAL COMPS
SPECIALTY-RELATED POSITIONS (See Note 2)
SENIOR INSPECTOR-MECHANICAL ENGINEERING MECHANICAL COMPS
SPECIALTY-IMMATERIAL POSITIONS (See Appendix F)
INSPECTOR LEVEL
INSPECTOR-ELECTRICAL AND INSTRUMENTATION ELECTRICAL COMPS
ENGINEER-INSTRUCTOR GS 13 H-56
INSPECTOR-MECHANICAL ENGINEERING MECHANICAL COMPS
SPECIALTY-IMMATERIAL POSITIONS (See Appendix F)
ASSISTANT INSPECTOR LEVEL
ASST INSPECTOR-ELECTRICAL AND INSTRUMENTATION ELECTRICAL COMPS
ASST INSPECTOR-MECHANICAL ENGINEERING MECHANICAL COMPS
INTERN LEVEL
INTERN INSPECTOR-ELECTRICAL AND INSTRUMENTATION ELECTRICAL COMPS
INTERN INSPECTOR-MECHANICAL ENGINEERING MECHANICAL COMPS

Fig. 3.18—Construction-Vendor, Electrical and Instrumentation, and Mechanical Engineering Subfields

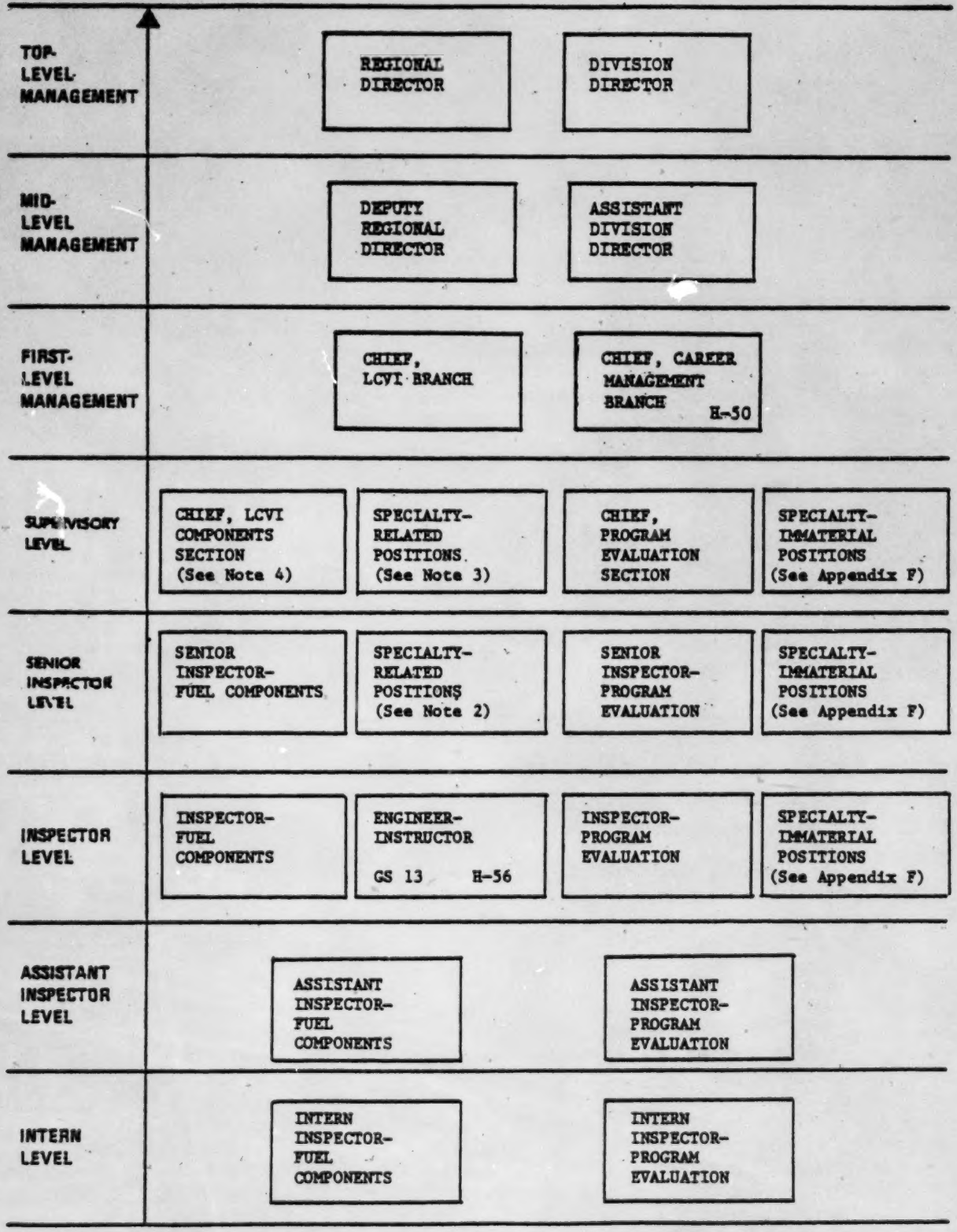


Fig. 3.19—Vendor, Fuels, and Program Evaluation Subfields

CONSTRUCTION-VENDOR (C-V) CAREER FIELD NOTES

1. The position of Engineer-Instructor, GS 13, (H-56) is open to all qualified members of the C-V Field.

2. The following positions are open to all qualified members of the C-V Field:

   Construction Inspection Specialist (H-24)
   Engineer-Instructor, GS 14, (H-55)

3. The position of Senior Construction Specialist (H-23) is open to all qualified members of the C-V Field.

   The following positions are open as shown:

   Senior Engineer-Civil Structural (H-19) to qualified members of the Projects/Resident, Civil Engineering, Geology, and Metallurgy Subfields
   Senior Engineer-Electrical (H-20) to qualified members of the Electrical and Instrumentation Subfield
   Senior Engineer-Mechanical (H-21) to qualified members of the Mechanical Engineering Subfield
   Senior Engineer-Metallurgical (H-22) to qualified members of the Metallurgy Subfield

4. There are four positions for which members of the C-V Career Field can compete, depending upon their career subfield:

   Chief, Construction Projects/Resident Section (R-17)
   Chief, Licensee Contractor Vendor Inspection (LCVI) Program Evaluation Section (R-93)
   Chief, Construction Engineering Support Section (R-22)
   Chief, (LCVI) Components Section (R-80)

   As described in the report on Task VII, a section chief is usually expected to have a thorough understanding of the program subject areas falling under his/her jurisdiction. Construction Engineering Support and the LCVI Components Sections present particular problems because of the breadth of program subject areas. Accordingly, the Chief, LCVI Components Section, when appointed, is to have a thorough understanding of the program subject areas of one of the three subfields. A new section chief should attain a working knowledge of those of the other two within 12 months of appointment.

Note 4 (continued)

When appointed, the Chief, Construction Engineering Support Section, is to understand thoroughly the program subject areas of one of the five subfields. A working knowledge in the program subject areas of the other four specialties is to be attained within 24 months. (The period of time is usually 12 months; in this case, however, the broad span of knowledge demands 24 months.)

Table 3.1

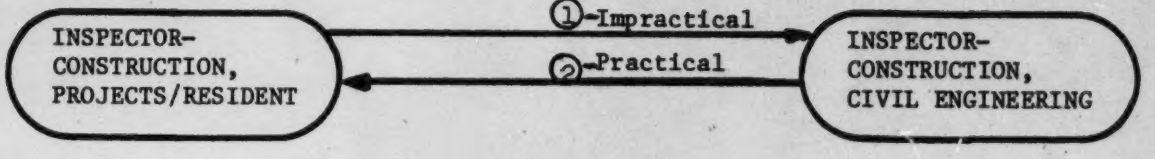
CONSTRUCTION-VENDOR INTRAFIELD MOBILITY

Figure	Title	Result
3.20	Construction, Projects/ Resident—Civil Engineering	Impractical for the P/R inspector; practical for the CE inspector
3.21	Construction, Projects/ Resident—Geology	Impractical for the P/R inspector; difficult for the Geology inspector
3.22	Construction, Projects/ Resident—Metallurgy	Impractical for the P/R inspector; practical for the Metallurgy inspector
3.23	Construction, Civil Engineering—Geology	Difficult for both
3.24	C-V, Electrical and Instrumentation—Mechanical Engineering	Impractical for both
3.25	Vendor, Fuels—Program Evaluation	Practical for both
3.26	Construction, Projects/ Resident—C-V, Electrical and Instrumentation	Impractical for the P/R inspector; practical for the E&I inspector
3.27	Construction, Projects/ Resident—C-V, Mechanical Engineering	Impractical for the P/R inspector; practical for the ME inspector
3.28	Construction, Projects/ Resident—Vendor, Fuels	Impractical for both
3.29	Construction, Projects/ Resident—Vendor, Program Evaluation	Practical for the P/R inspector; difficult for the PE inspector
3.30	Construction, Civil Engineering—C-V, Mechanical Engineering	Difficult for both

Table 3.1 (continued)

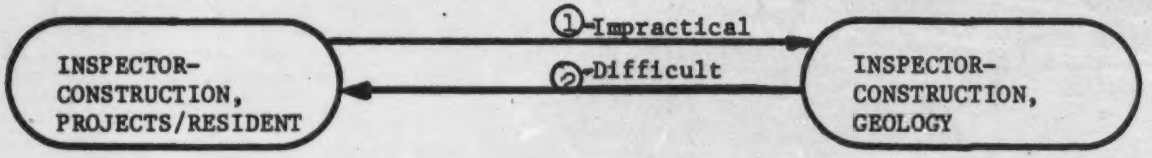
CONSTRUCTION-VENDOR INTRAFIELD MOBILITY

Figure	Title	Result
3.31	Construction, Civil Engineering—Vendor, Fuels	Impractical for both
3.32	Construction, Civil Engineering—Vendor, Program Evaluation	Difficult for the CE inspector; impractical for the PE inspector
3.33	Construction, Metallurgy—C-V, Mechanical Engineering	Difficult for both
3.34	Construction, Metallurgy—Vendor, Fuels	Practical for both
3.35	Construction, Metallurgy—Vendor, Program Evaluation	Difficult for the Metallurgy inspector; impractical for the PE inspector
3.36	C-V, Electrical and Instrumentation—Vendor, Fuels	Impractical for both
3.37	C-V, Electrical and Instrumentation—Vendor, Program Evaluation	Difficult for the E&I inspector; impractical for the PE inspector
3.38	C-V, Mechanical Engineering—Vendor, Fuels	Practical for both
3.39	C-V, Mechanical Engineering—Vendor, Program Evaluation	Difficult for the ME inspector; impractical for the PE inspector



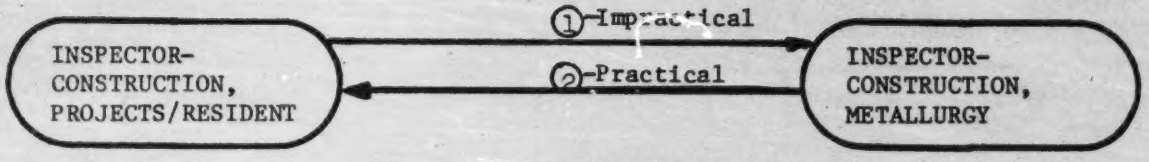
MOBILITY PATH	①	②
PROGRAM SUBJECT AREAS NECESSARY FOR MOVEMENT	Acquire a thorough understanding of: Seismology Structural Design (Civil) Civil Engineering Theory	Acquire a thorough understanding of: Equipment/Cable Qualification and Testing (Electrical) Facility Management (Quality Assurance and Administrative Controls) Health Physics (Own Safety) Successfully complete the following NRC/IE courses: Electrical Technology and Codes Instrumentation Technology and Codes Nondestructive Examination General Welding Technology and Codes

Fig. 3.20—Intrafield Mobility: Construction, Projects/Resident - Civil Engineering



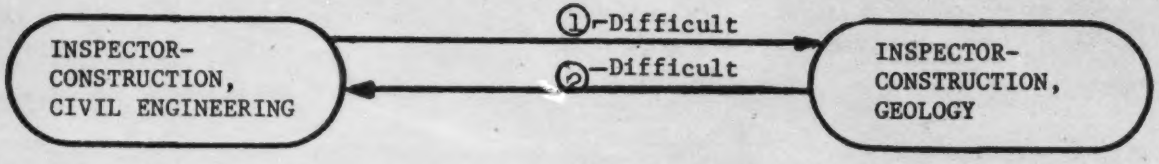
MOBILITY PATH	①	②
PROGRAM SUBJECT AREAS NECESSARY FOR MOVEMENT	Acquire a thorough understanding of: Theory of Geology	Acquire a thorough understanding of: Equipment/Cable Qualification and Testing (Electrical) Facility Management (Quality Assurance and Administrative Controls) General Engineering Theory Health Physics (Own Safety) Successfully complete the following NRC/IE courses: BWR or PWR Fundamentals Electrical Technology and Codes Instrumentation Technology and Codes Nondestructive Examination General Welding Technology and Codes

Fig. 3.21—Intrafield Mobility: Construction, Projects/Resident - Geology



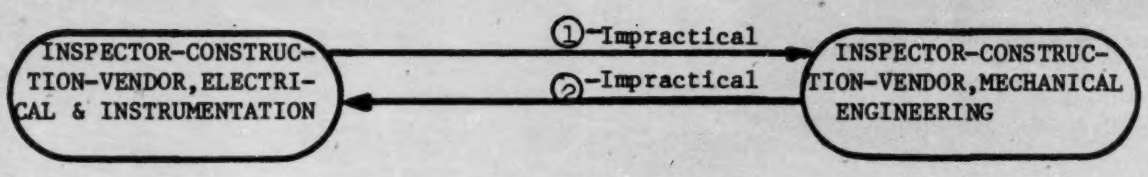
MOBILITY PATH	①	②
PROGRAM SUBJECT AREAS NECESSARY FOR MOVEMENT	Acquire a thorough understanding of: Anchorages and Supports (Mechanical) Destruction Examination Technology (Metals) Theory of Metallurgy	Acquire a thorough understanding of: Equipment/Cable Qualification and Testing (Electrical) Facility Management (Quality Assurance and Administrative Controls) Soils Characteristics Structural Fabrication and Construction Techniques Successfully complete the following NRC/IE courses: Concrete Technology and Codes Electrical Technology and Codes Instrumentation Technology and Codes

Fig. 3.22—Intrafield Mobility: Construction, Projects/Resident - Metallurgy



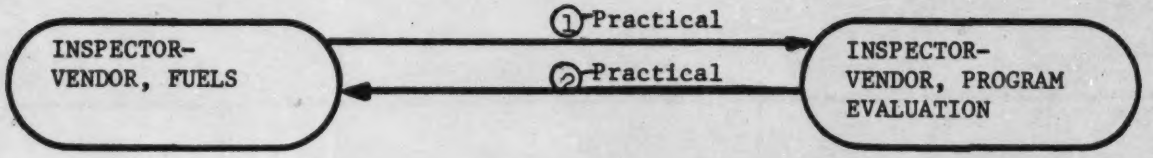
MOBILITY PATH	①	②
PROGRAM SUBJECT AREAS NECESSARY FOR MOVEMENT	Acquire a thorough understanding of: Theory of Geology	Acquire a thorough understanding of: Structural Design (Civil) Civil Engineering Theory Successfully complete the following NRC/IE course: BWR and PWR Fundamentals

Fig. 3.23—Intrafield Mobility: Construction, Civil Engineering—Geology



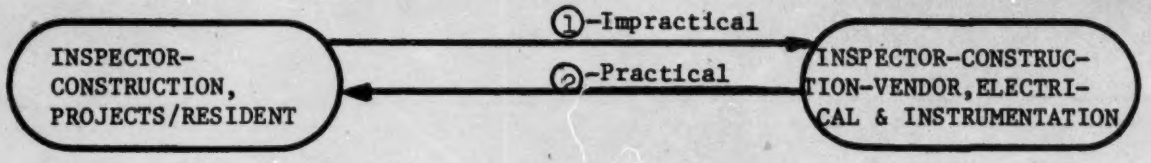
MOBILITY PATH	①	②
PROGRAM SUBJECT AREAS NECESSARY FOR MOVEMENT	Acquire a thorough understanding of: Anchorages and Supports (Mechanical) Destructive Examination Technology (Metals) Mechanical Components Design and Fabrication Metallurgical/Mechanical Engineering Theory Successfully complete the following NRC/IE courses: Nondestructive Examination General Welding Technology and Codes	Acquire a thorough understanding of: Chemical and Physical Properties of Materials Electrical Components Design and Fabrication Equipment/Cable Qualification and Testing (Electrical) Statistical Sampling Supports and Braces (Electrical) Electrical or Instrumentation Engineering Theory Successfully complete the following NRC/IE courses: Electrical Technology and Codes Instrumentation Technology and Codes

Fig. 3.24—Intrafield Mobility: C-V, Electrical & Instrumentation - Mechanical Engineering



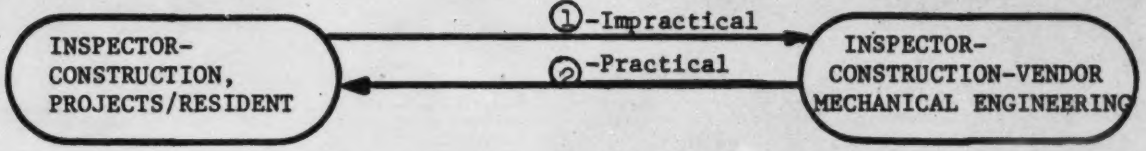
MOBILITY PATH	①	②
PROGRAM SUBJECT AREAS NECESSARY FOR MOVEMENT	Acquire a thorough understanding of: Computer Software Engineering Design (Safety Related Systems) Power Plant Safety Accident Analysis	Acquire a thorough understanding of: Fuel Components Design and Fabrication Special Process Controls (Fuels) Statistical Sampling

Fig. 3.25—Intrafield Mobility: Vendor, Fuels - Program Evaluation



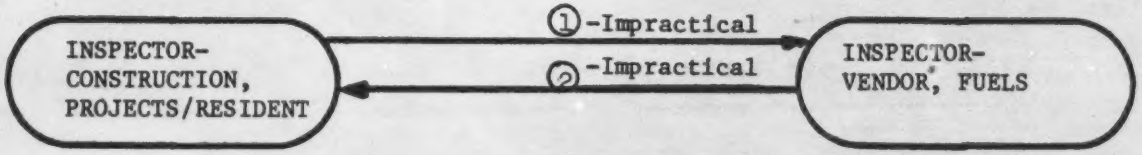
MOBILITY PATH	①	②
PROGRAM SUBJECT AREAS NECESSARY FOR MOVEMENT	Acquire a thorough understanding of: Chemical and Physical Properties of Materials Electrical Components Design and Fabrication Supports and Braces (Electrical) Electrical or Instrumentation Engineering Theory	Acquire a thorough understanding of: Facility Management (Quality Assurance and Administrative Controls) Health Physics (Own Safety) Soils Characteristics Structural Fabrication and Construction Techniques Successfully complete the following NRC/IE courses: Concrete Technology and Codes Nondestructive Examination General Welding Technology and Codes

Fig. 3.26—Intrafield Mobility: Construction, Projects/Resident - C-V, Electrical & Instrumentation



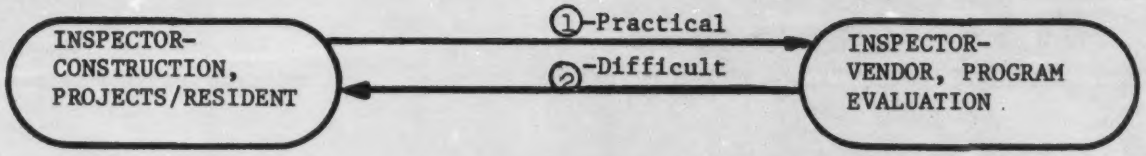
MOBILITY PATH	①	②
PROGRAM SUBJECT AREAS NECESSARY FOR MOVEMENT	Acquire a thorough understanding of: Anchorages and Supports (Mechanical) Destructive Examination Technology (Metals) Mechanical Components Design and Fabrication Metallurgical/Mechanical Engineering Theory	Acquire a thorough understanding of: Equipment/Cable Qualification and Testing (Electrical) Facility Management (Quality Assurance and Administrative Controls) Health Physics (Own Safety) Soils Characteristics Structural Fabrication and Construction Techniques Successfully complete the following NRC/IE courses: Concrete Technology and Codes Electrical Technology and Codes Instrumentation Technology and Codes

Fig. 3.27— Intrafield Mobility: Construction, Projects/Resident - C-V, Mechanical Engineering



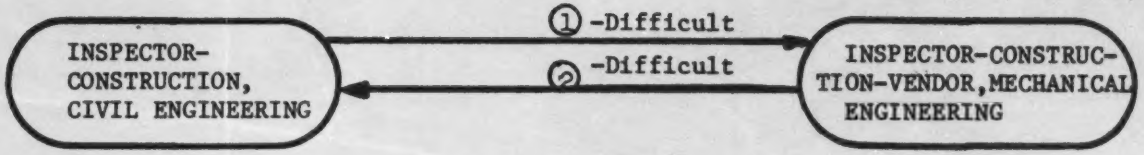
MOBILITY PATH	①	②
PROGRAM SUBJECT AREAS NECESSARY FOR MOVEMENT	Acquire a thorough understanding of: Fuel Components Design and Fabrication Special Process Controls (Fuels) Statistical Sampling Mechanical, Nuclear, or Metallurgical Engineering Theory	Acquire a thorough understanding of: Equipment/Cable Qualification and Testing (Electrical) Facility Management (Quality Assurance and Administrative Controls) Health Physics (Own Safety) Soils Characteristics Structural Fabrication and Construction Techniques Successfully complete the following NRC/IE courses: Concrete Technology and Codes Electrical Technology and Codes Instrumentation Technology and Codes

Fig. 3.28—Intrafield Mobility: Construction, Projects/Resident - Vendor, Fuels



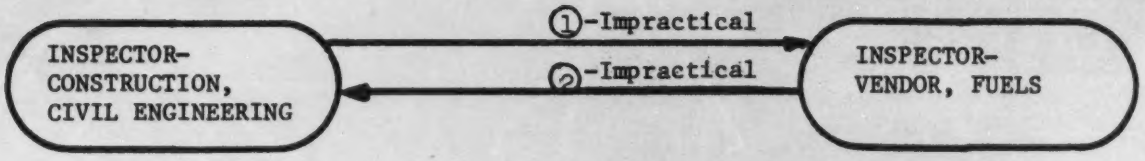
MOBILITY PATH	①	②
PROGRAM SUBJECT AREAS NECESSARY FOR MOVEMENT	Acquire a thorough understanding of: Computer Software Engineering Design (Safety-Related Systems) Power Plant Safety Accident Analysis	Acquire a thorough understanding of: Equipment/Cable Qualification and Testing (Electrical) Facility Management (Quality Assurance and Administrative Controls) Health Physics (Own Safety) Soils Characteristics Structural Fabrication and Construction Techniques Successfully complete the following NRC/IE courses: Concrete Technology and Codes Electrical Technology and Codes Instrumentation Technology and Codes

Fig. 3.29—Intrafield Mobility: Construction, Projects/Resident - Vendor, Program Evaluation



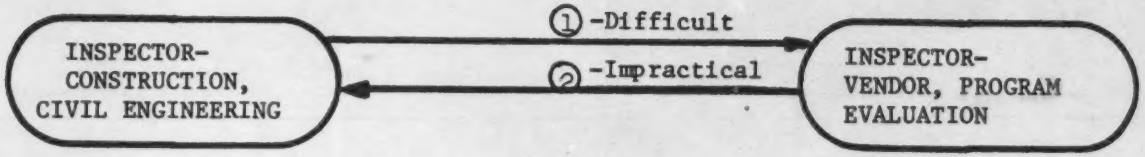
MOBILITY PATH	①	②
PROGRAM SUBJECT AREAS NECESSARY FOR MOVEMENT	Acquire a thorough understanding of: Anchorages and Supports (Mechanical) Destructive Examination Technology (Metals) Mechanical Components Design and Fabrication Metallurgical/Mechanical Engineering Theory Successfully complete the following NRC/IE courses: Nondestructive Examination General Welding Technology and Codes	Acquire a thorough understanding of: Seismology Soils Characteristics Structural Design (Civil) Structural Fabrication and Construction Techniques Civil Engineering Theory Successfully complete the following NRC/IE course: Concrete Technology and Codes

Fig. 3.30—Intrafield Mobility: Construction, Civil Engineering - C-V, Mechanical Engineering



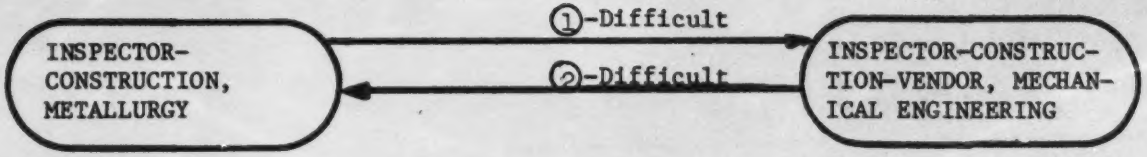
MOBILITY PATH	①	②
PROGRAM SUBJECT AREAS NECESSARY FOR MOVEMENT	Acquire a thorough understanding of: Fuel Components Design and Fabrication Special Process Controls (Fuels) Statistical Sampling Mechanical, Nuclear, or Metallurgical Engineering Theory Successfully complete the following NRC/IE courses: Nondestructive Examination General Welding Technology and Codes	Acquire a thorough understanding of: Seismology Soils Characteristics Structural Design (Civil) Structural Fabrication and Construction Techniques Civil Engineering Theory Successfully complete the following NRC/IE course: Concrete Technology and Codes

Fig. 3.31—Intrafield Mobility: Construction, Civil Engineering - Vendor, Fuels



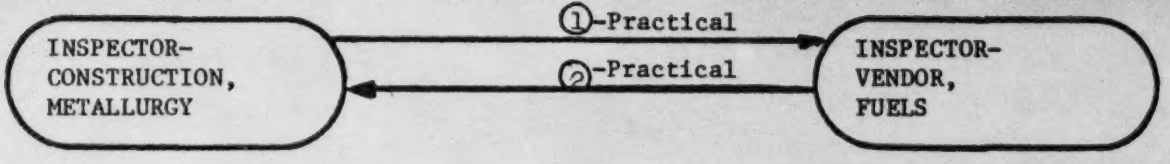
MOBILITY PATH	①	②
PROGRAM SUBJECT AREAS NECESSARY FOR MOVEMENT	Acquire a thorough understanding of: Computer Software Engineering Design (Safety Related Systems) Power Plant Safety Accident Analysis Successfully complete the following NRC/IE courses: Nondestructive Examination General Welding Technology and Codes	Acquire a thorough understanding of: Seismology Soils Characteristics Structural Design (Civil) Structural Fabrication and Construction Techniques Civil Engineering Theory Successfully complete the following NRC/IE course: Concrete Technology and Codes

Fig. 3.32—Intrafield Mobility: Construction, Civil Engineering - Vendor, Program Evaluation



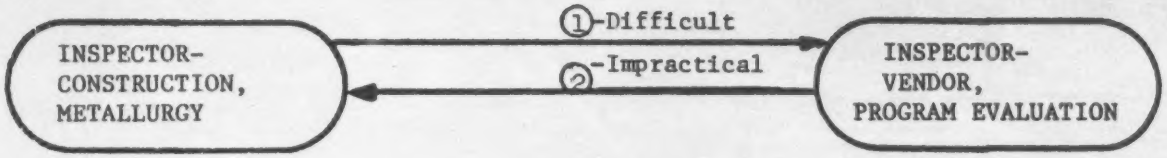
MOBILITY PATH	①	②
PROGRAM SUBJECT AREAS NECESSARY FOR MOVEMENT	Acquire a thorough understanding of: Mechanical Components Design and Fabrication Mechanical Engineering Theory	Acquire a thorough understanding of: Health Physics (Own Safety) Theory of Metallurgy

Fig. 3.33-Intrafield Mobility: Construction, Metallurgy - C-V, Mechanical Engineering



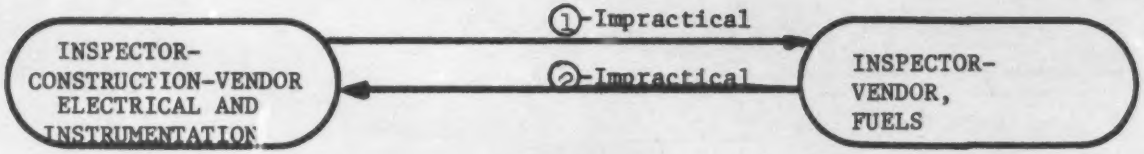
MOBILITY PATH	①	②
PROGRAM SUBJECT AREAS NECESSARY FOR MOVEMENT	Acquire a thorough understanding of: Fuel Components Design and Fabrication Special Process Controls (Fuels) Statistical Sampling	Acquire a thorough understanding of: Anchorages and Supports (Mechanical) Destructive Examination Technology (Metals) Health Physics (Own Safety) Theory of Metallurgy

Fig. 3.34—Intrafield Mobility: Construction, Metallurgy - Vendor, Fuels



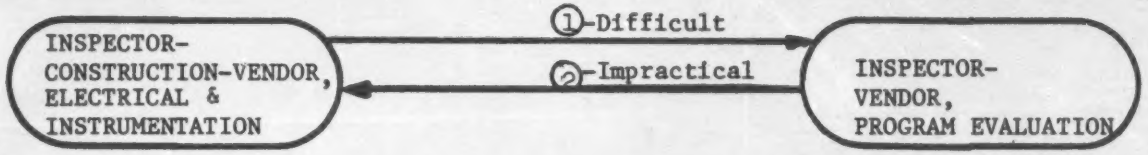
MOBILITY PATH	①	②
PROGRAM SUBJECT AREAS NECESSARY FOR MOVEMENT	Acquire a thorough understanding of: Computer Software Engineering Design (Safety Related Systems) Power Plant Safety Accident Analysis	Acquire a thorough understanding of: Anchorages and Supports (Mechanical) Destructive Examination Technology (Metals) Health Physics (Own Safety) Theory of Metallurgy

Fig. 3.35—Intrafield Mobility: Construction, Metallurgy - Vendor, Program Evaluation



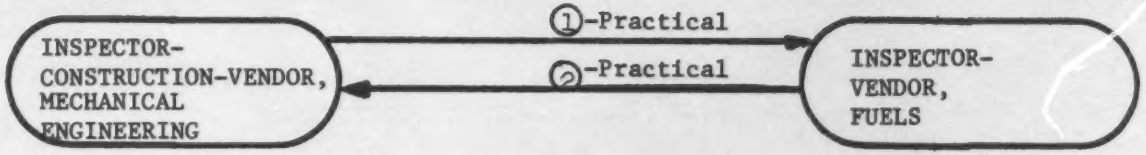
MOBILITY PATH	①	②
PROGRAM SUBJECT AREAS NECESSARY FOR MOVEMENT	Acquire a thorough understanding of: Fuel Components Design and Fabrication Special Process Controls (Fuels) Statistical Sampling Mechanical, Nuclear or Metallurgical Engineering Theory Successfully complete the following NRC/IE courses: Nondestructive Examination General Welding Technology and Codes	Acquire a thorough understanding of: Chemical and Physical Properties of Materials Electrical Components Design and Fabrication Equipment/Cable Qualification and Testing (Electrical) Supports and Braces (Electrical) Electrical or Instrumentation Engineering Theory Successfully complete the following NRC/IE courses: Electrical Technology and Codes Instrumentation Technology and Codes

Fig. 3.36—Intrafield Mobility: C-V, Electrical and Instrumentation - Vendor, Fuels



MOBILITY PATH	①	②
PROGRAM SUBJECT AREAS NECESSARY FOR MOVEMENT	Acquire a thorough understanding of: Computer Software Engineering Design (Safety Related Systems) Power Plant Safety Accident Analysis Successfully complete the following NRC/IE courses: Nondestructive Examination General Welding Technology and Codes	Acquire a thorough understanding of: Chemical and Physical Properties of Materials Electrical Component Design and Fabrication Equipment/Cable Qualification and Testing Statistical Sampling Supports and Braces (Electrical) Electrical or Instrumentation Engineering Theory Successfully complete the following NRC/IE courses: Electrical Technology and Codes Instrumentation Technology and Codes

Fig. 3.37—Intrafield Mobility: C-V, Electrical & Instrumentation - Vendor, Program Evaluation



MOBILITY PATH	①	②
PROGRAM SUBJECT AREAS NECESSARY FOR MOVEMENT	Acquire a thorough understanding of: Fuel Components Design and Fabrication Special Process Controls (Fuels) Statistical Sampling Nuclear or Metallurgical Engineering Theory (if necessary)	Acquire a thorough understanding of: Anchorages and Supports (Mechanical) Destructive Examination Technology (Metals) Mechanical Component Design and Fabrication Metallurgical/Mechanical Engineering Theory (if necessary)

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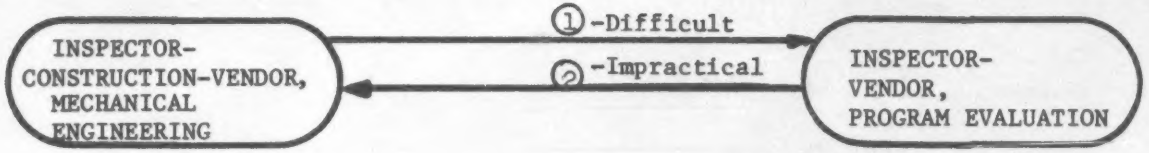
Fig. 3.38—Intrafield Mobility: C-V, Mechanical Engineering - Vendor, Fuels



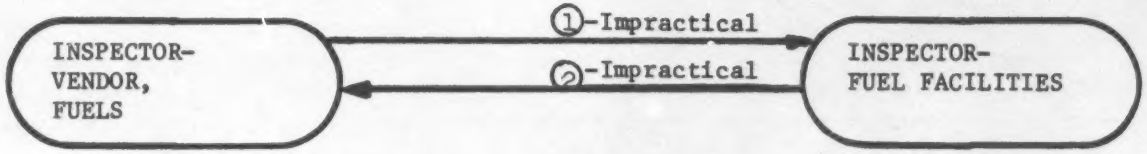
MOBILITY PATH	①	②
PROGRAM SUBJECT AREAS NECESSARY FOR MOVEMENT	Acquire a thorough understanding of: Computer Software Engineering Design (Safety Related Systems) Power Plant Safety Accident Analysis	Acquire a thorough understanding of: Anchorages and Supports (Mechanical) Destructive Examination Technology (Metals) Mechanical Components Design and Fabrication Metallurgical/Mechanical Engineering Theory

Fig. 3.39— Intrafield Mobility: C-V, Mechanical Engineering - Vendor, Program Evaluation

Table 3.2

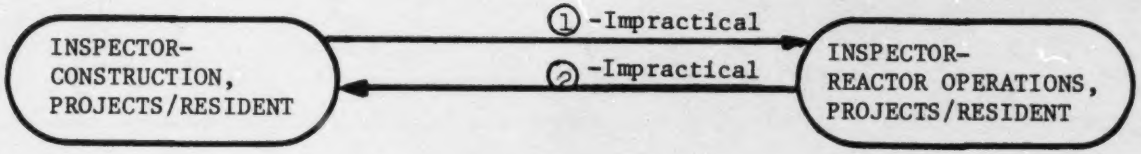
CONSTRUCTION-VENDOR INTERFIELD MOBILITY

Figure	Title	Result
3.40	Vendor, Fuels-Fuel Facilities	Impractical for both
3.41	Construction, Projects/ Resident-Reactor Operations, Projects/Resident	Impractical for both
3.42	Vendor, Program Evaluation-Reactor Operations, Projects/Resident	Impractical for both



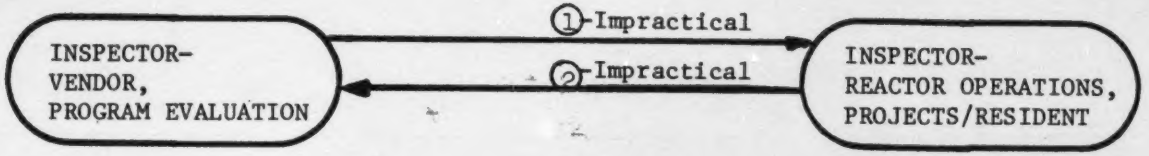
MOBILITY PATH	①	②
PROGRAM SUBJECT AREAS NECESSARY FOR MOVEMENT	Acquire a thorough understanding of: Criticality Safety Environmental Monitoring Fuel Cycle Facilities Fuel Facility Design Considerations Fuel Chemical Separation Technology Fuels Waste Management Technology Health Physics (Basic Concepts) Materials Control and Accounting (Fuels) Preoperational and Startup Testing (Fuel Facilities) Transportation (Fuels)	Acquire a thorough understanding of: Fuel Components Design and Fabrication Special Process Controls (Fuels) Statistical Sampling Successfully complete the following NRC/IE courses: BWR and PWR Fundamentals Nondestructive Examination General Quality Assurance Welding Technology and Codes

Fig. 3.40—Interfield Mobility: Vendor, Fuels-Fuel Facilities



MOBILITY PATH	①	②
PROGRAM SUBJECT AREAS NECESSARY FOR MOVEMENT	Acquire a thorough understanding of: Health Physics (Basic Concepts) Nuclear Engineering Theory Security Successfully complete the following NRC/IE courses: BWR or PWR Control Room Operations BWR or PWR Integrated Facility Operations BWR or PWR Power Plant Systems and Procedures	Acquire a thorough understanding of: Equipment/Cables Qualification and Testing (Electrical) Soils Characteristics Structural Fabrication and Construction Techniques Successfully complete the following NRC/IE courses: Concrete Technology and Codes Electrical Technology and Codes Instrumentation Technology and Codes Nondestructive Examination General Quality Assurance Welding Technology and Codes

Fig. 3.41—Interfield Mobility: Construction-Vendor, Projects/Resident - Reactor Operations, Projects/Resident



MOBILITY PATH	①	②
PROGRAM SUBJECT AREAS NECESSARY FOR MOVEMENT	Acquire a thorough understanding of: Facility Management (Quality Assurance and Administrative Controls) Health Physics (Basic Concepts) Nuclear Engineering Theory Security Successfully complete the following NRC/IE courses: BWR or PWR Control Room Operations BWR or PWR Integrated Facility Operations BWR or PWR Power Plant Systems and Procedures	Acquire a thorough understanding of: Computer Software Engineering Design (Safety Related Systems) Power Plant Safety Accident Analysis) Successfully complete the following NRC/IE courses: Nondestructive Examination General Quality Assurance Welding Technology and Codes

Fig. 3.42—Interfield Mobility: Construction-Vendor, Program Evaluation - Reactor Operations, Projects/Resident

Section D

REACTOR OPERATIONS CAREER FIELD

The Reactor Operations Career Field, displayed at Figure 3.43, has two subfields: Reactor Operations, Projects/Resident (Figure 3.44) and Reactor Operations, Nuclear Support (RONS) (Figure 3.45). (Notes for all three figures appear on page 64.) As noted in the reports on other tasks within this project, there is no standard, NRC/IE-wide breakout of functions between the two subfields. Neither is there, among the regions, a common pattern of transfer between the two subfields—in several, the RONS Subfield is a "training camp" for potential Projects/Resident inspectors. Because there is neither a standard breakout nor a common pattern, it is not possible to detail the possibilities of intrafield transfer. As it has in reports on previous tasks, GRC recommends the development by NRC/IE of a standard division of duties between these subfields.

The Reactor Operations Career Field has few knowledge qualifications in common with those of other career fields. Figures 3.41 and 3.42 displayed the impracticality of transfer between this career field and the Construction-Vendor Career Field. Other interfield transfers are even more impractical.

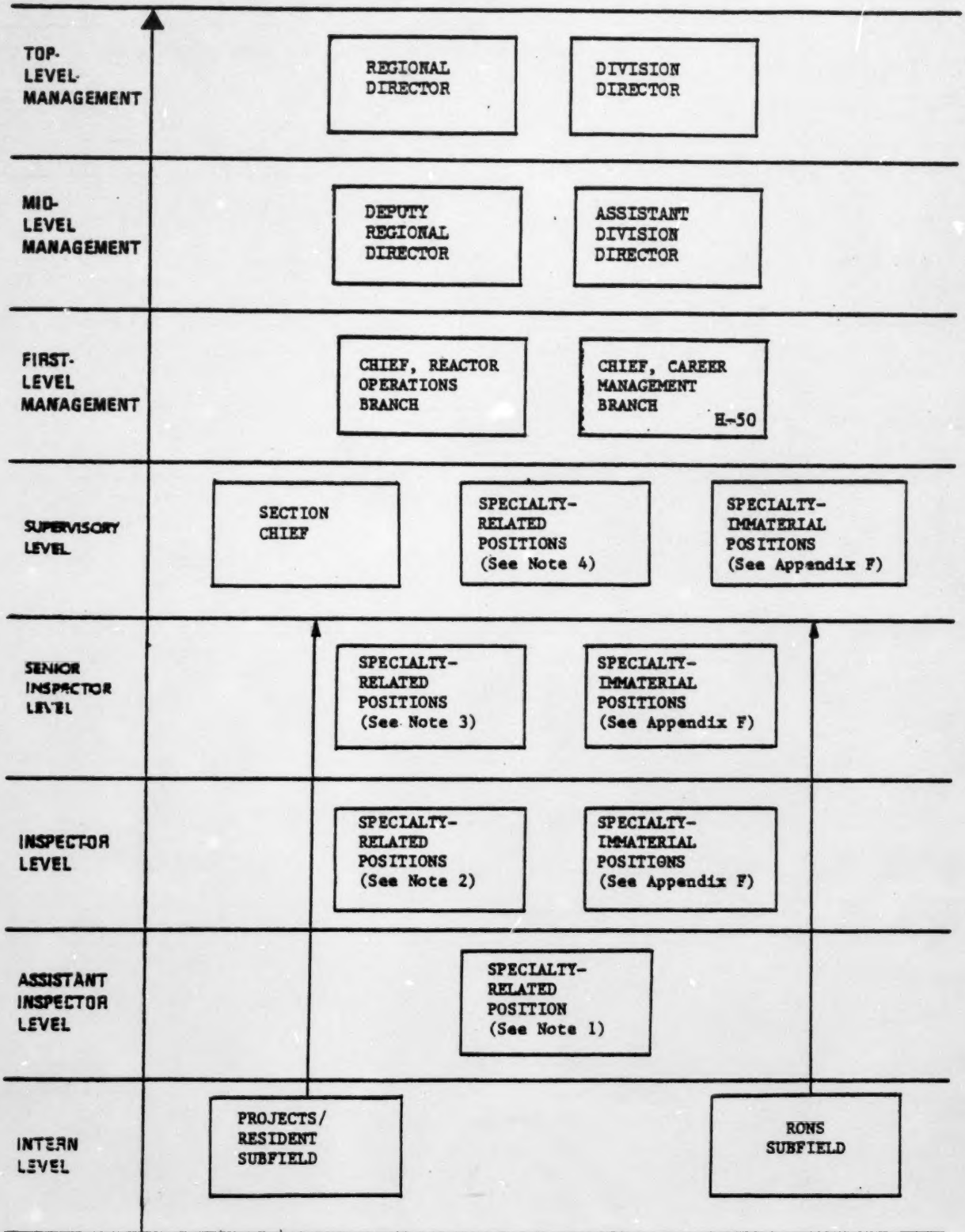


Fig. 3.43—Reactor Operations Career Field

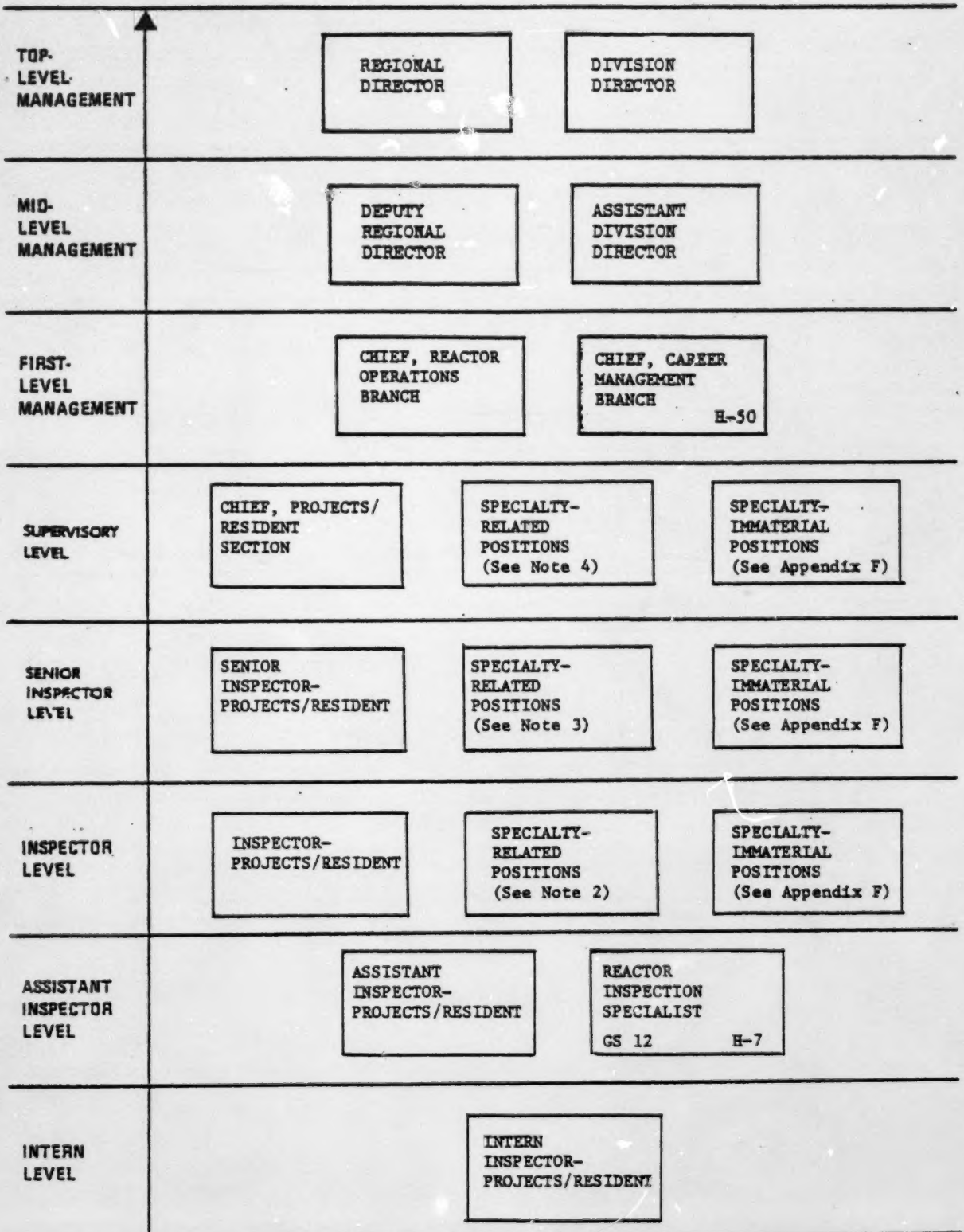


Fig. 3.44—Projects/Resident Subfield

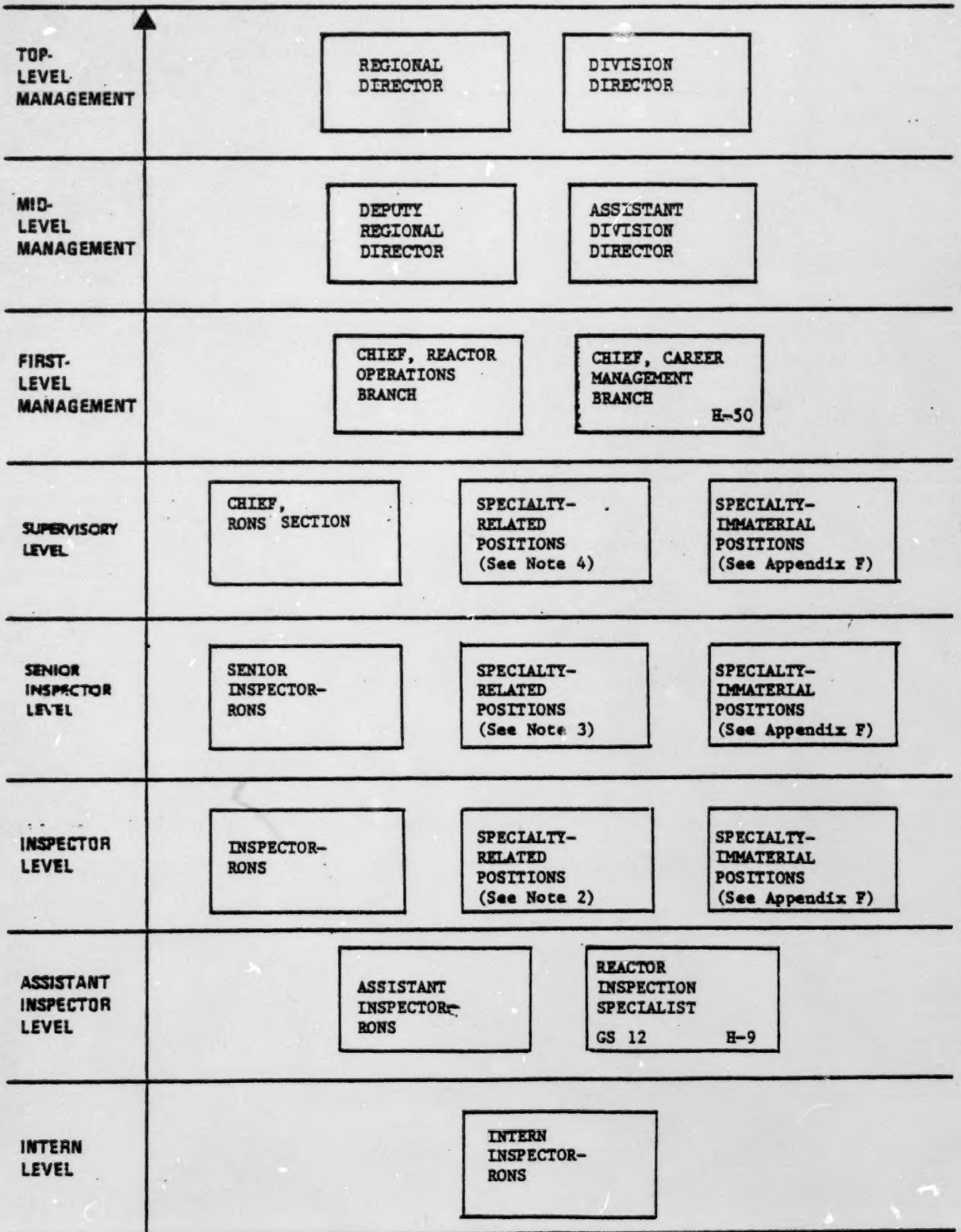


Fig. 3.45—RONS Subfield

REACTOR OPERATIONS CAREER FIELD NOTES

1. The position of Reactor Inspection Specialist, GS 12, (H-7) is open to all members of this career field.

2. The following positions are open to all members of the career field:

   Reactor Inspection Specialist, GS 13, (H-6)
   Nuclear Engineer-Instructor, GS 13, (H-54)

3. The following positions are open to all members of this career field with the appropriate technical background:

   Reactor Inspection Specialist, GS 14, (H-5)
   Instrumentation and Control Engineer (H-9)
   Metallurgical Engineer (H-11)
   Nuclear Engineer (H-13)
   Mechanical Engineer (H-15)
   Chief, BWR Technology Section (H-51)
   Chief, PWR Technology Section (H-52)
   Nuclear Engineer-Instructor, GS 14, (H-53)

4. The following positions are open to all members of this career field with the appropriate technical background:

   Senior Reactor Inspection Specialist-TP (H-4)
   Senior Instrumentation and Control Engineer (H-8)
   Senior Metallurgical Engineer (H-10)
   Senior Nuclear Engineer (H-12)
   Senior Mechanical Engineer (H-14)
   Senior Reactor Inspector Specialist-FC (H-16)

Section E

FUEL FACILITIES CAREER LADDER

The Fuel Facilities Career Ladder shown at Figure 3.46 covers the present Fuel Facilities inspector positions in the regions and the related ones at Headquarters, NRC/IE. There is limited breadth to this specialty, and horizontal and lateral movement are limited. But there is ample opportunity for vertical movement: there are the two specialty-related positions at the Headquarters as well as the specialty-immaterial billets there, which are open to all personnel in this career field. Considering its small population, opportunities appear as promising as in other fields.

GRC recommends that the title of these inspectors be changed to Fuel Processing inspectors to reflect the activity rather than the place of inspection; this would make them analogous to the titles of other inspectors. The branch chief title should also be modified to accommodate this change and the redesignation of the Health Physics Career Field; the new title would be Chief, Fuel Processing and Health Physics Branch.

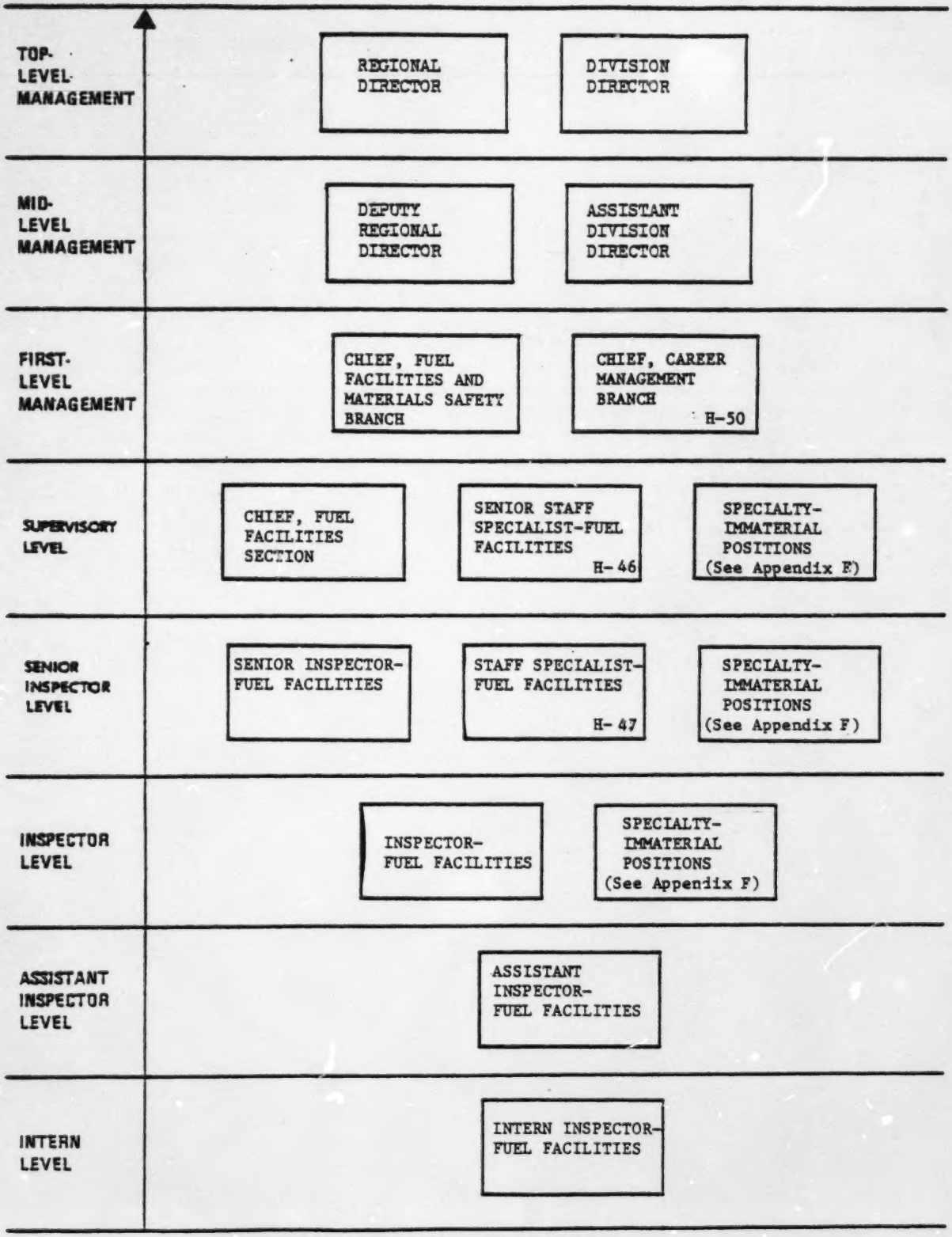


Fig. 3.46—Fuel Facilities Career Ladder

Section F

INVESTIGATOR CAREER LADDER

The Investigator Career Ladder shown at Figure 3.47 covers the one regional position and two specialty-related positions at Headquarters, NRC/IE. It notes also the specialty-immaterial positions for which the investigator is eligible. Investigators are hired on the basis of their experience outside NRC/IE. There is only one regional position (R-4) for the investigator, who can serve in positions corresponding to any of the three inspector levels; since investigators do not serve as interns, that level has been left blank.

There were no opportunities for lateral transfer from this field on the basis of position requirements. An individual investigator might have skills applicable elsewhere which would enhance mobility (probably in the Security Career Subfield of Safeguards). These skills, however, are characteristics of the individual, not of the position.

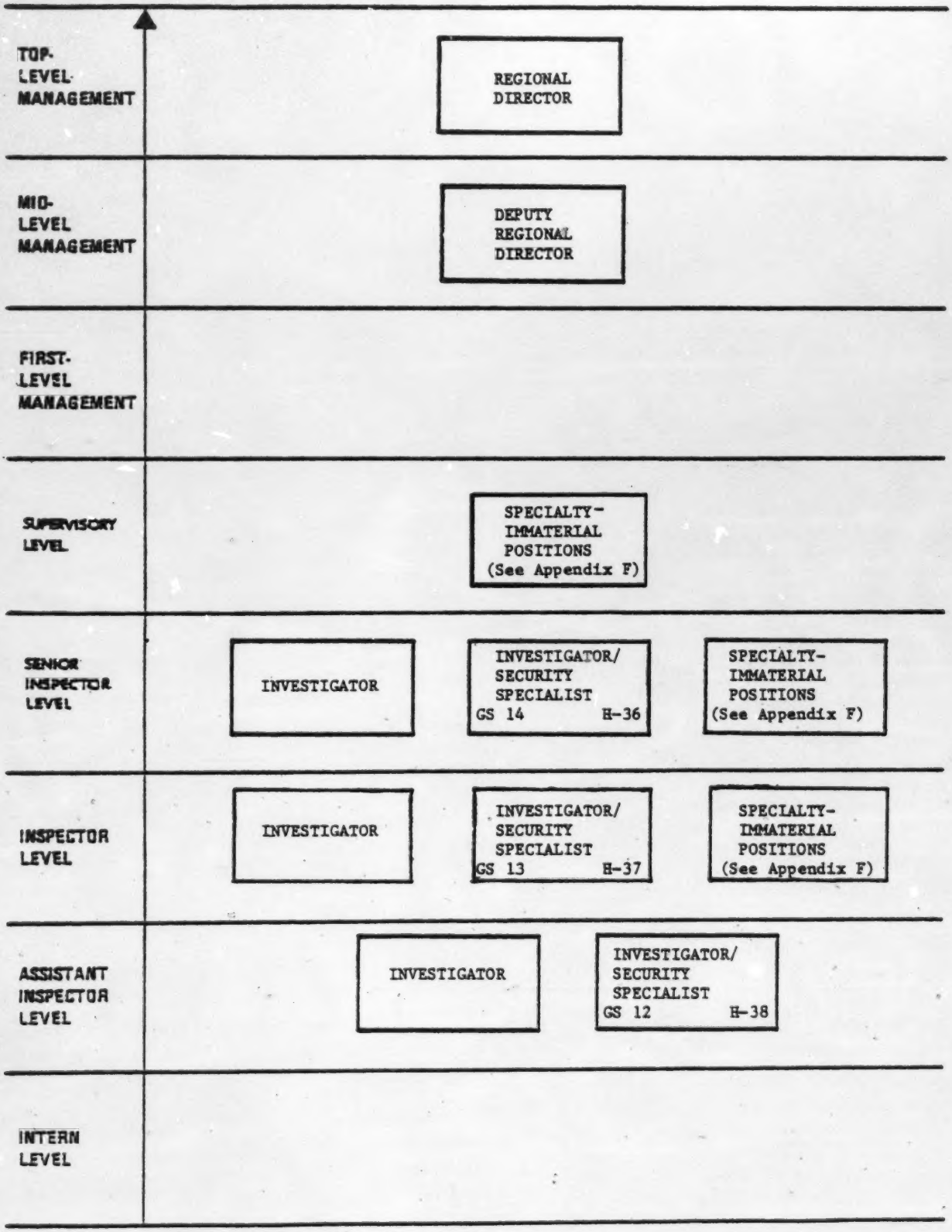


Fig. 1.47—Investigator Career Ladder

Section G

OVERALL

Figure 3.48 shows the NRC/IE career lattice containing the four career fields and two career ladders. Following that figure are six charts (Figures 3.49 through 3.54) which completely portray each career field or ladder—by subfield, if applicable. Each lists all the current positions, specialty-related or specialty-immaterial, for which the career (sub)field member is eligible.

As the preceding sections of this chapter related, all four career fields provide reasonable opportunities within their bounds for the promotion of their members and reasonable intrafield mobility for diversity in their assignments. (Those opportunities could be further enhanced by the Health Physics and Safeguards intrafield consolidations which GRC has recommended.) Even the Fuel Facilities Career Ladder provides its members opportunity for a full career. Only the Investigator Career Ladder is restricted.

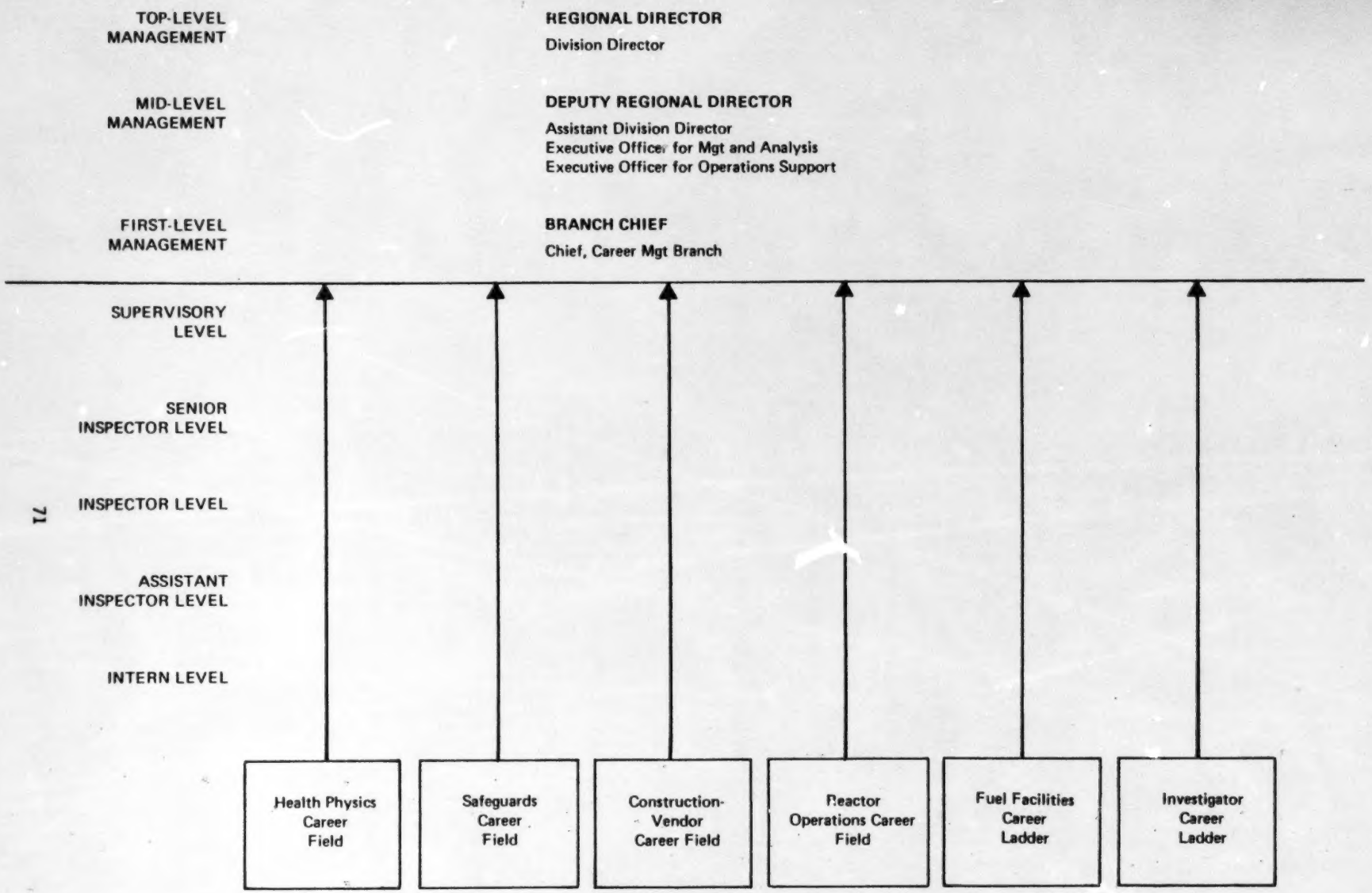
There is full interfield mobility at and above the branch chief level. Below that level, however, it is only the atypical career field member—one with a sound academic education in and extensive practical experience applicable to a second field—who can make such a move with ease. Even that individual will probably require refresher education in the appropriate scientific discipline, attendance at pertinent NRC/IE courses, and some on-the-job training.

As a consequence, any significant amount of interfield mobility will be expensive in training cost and time. Despite these expenses, a limited amount of interfield mobility should be encouraged—even directed—to broaden the knowledge and work experience of selected individuals in preparation for supervisory and managerial positions. Also interfield transfers should be allowed, on a very limited basis, for those dissatisfied in their present career field but adjudged by NRC/IE management to have potential in another field.

There is one other aspect to interfield mobility. Changing national energy policies, with consequent shifts in workloads, may require transfers of inspectors from one career field to another. These transfers may involve many more personnel than the individual-centered shifts described in the preceding paragraph; because training costs are so much a reflection of the numbers involved, any such shift will require significant expenditures—as well as significant loss of inspector time.

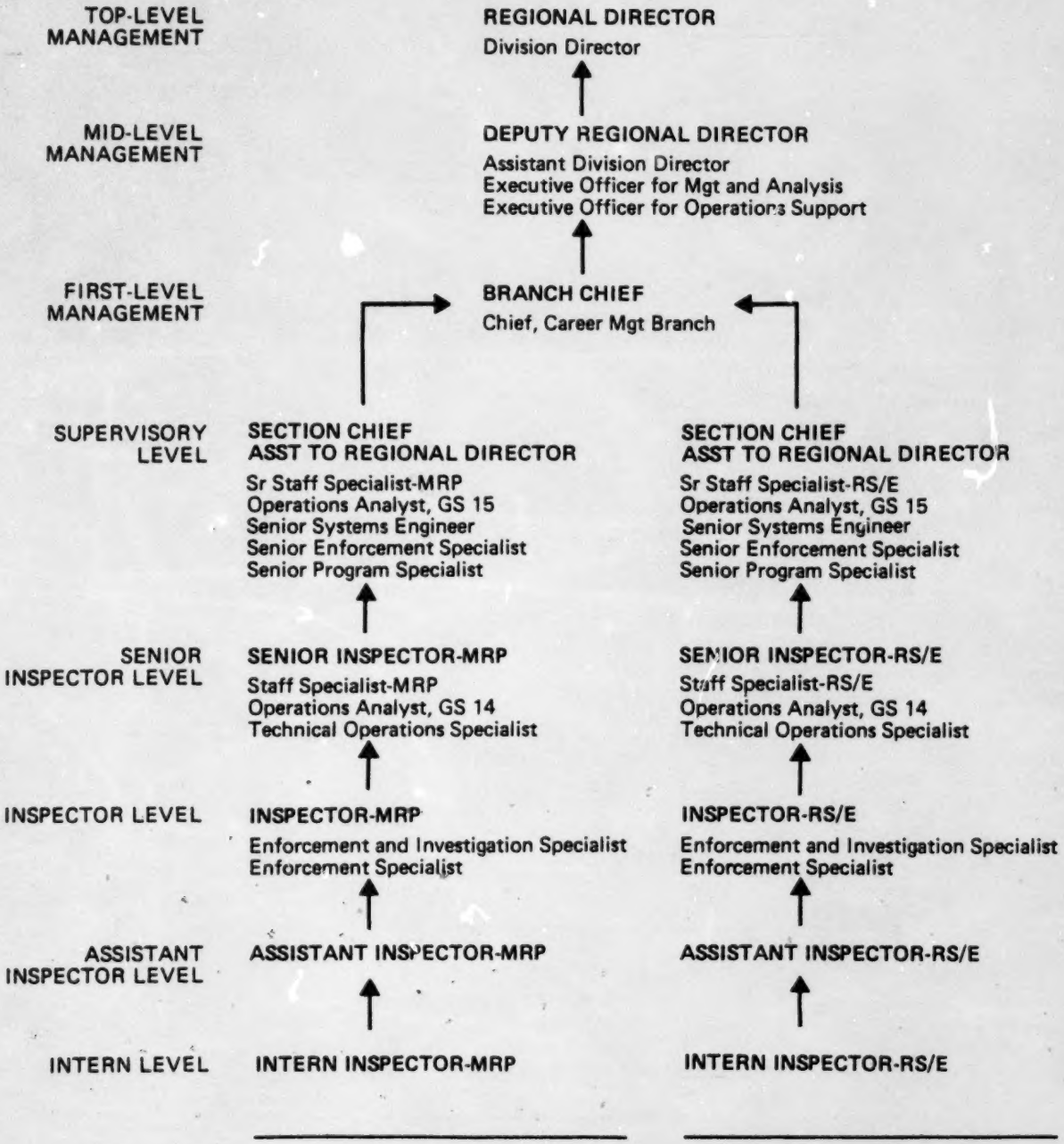
GRC emphasizes that there is no true alternative to meeting these costs. The report of Task VII of this project displays the minimum professional standards to which NRC/IE expects its employees to adhere. Maintaining these standards under normal circumstances requires constant supervision and a formal system of refresher training. Maintaining them in the event of bulk interfield transfers will be a major challenge which cannot be met by a casual reliance on such measures as on-the-job training.

NRC/IE should, therefore, charge a responsible staff officer—probably the Chief, Resource Management Branch—with predicting workload requirements up to 3 years in the future. The Chief, Career Management Branch, should be charged with conducting the appropriate retraining and requalification programs well in advance of any reassignment.



CAREER LATTICE

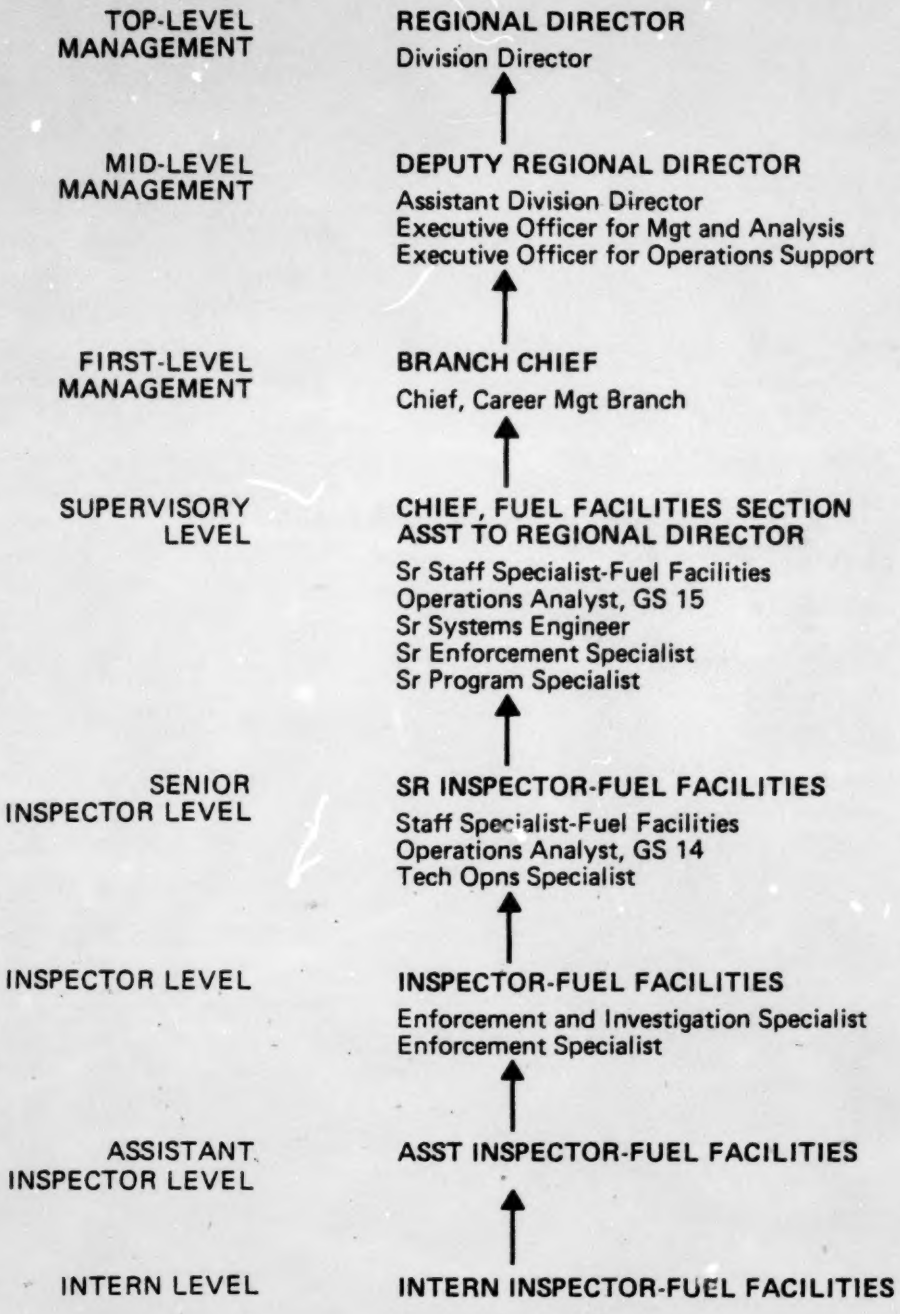
(Fig. 3.48)



INTRAFIELD MOBILITY:
Materials Radiological Protection to Radiation Support/Environmental: Practical
Radiation Support/Environmental to Materials Radiological Protection: Practical

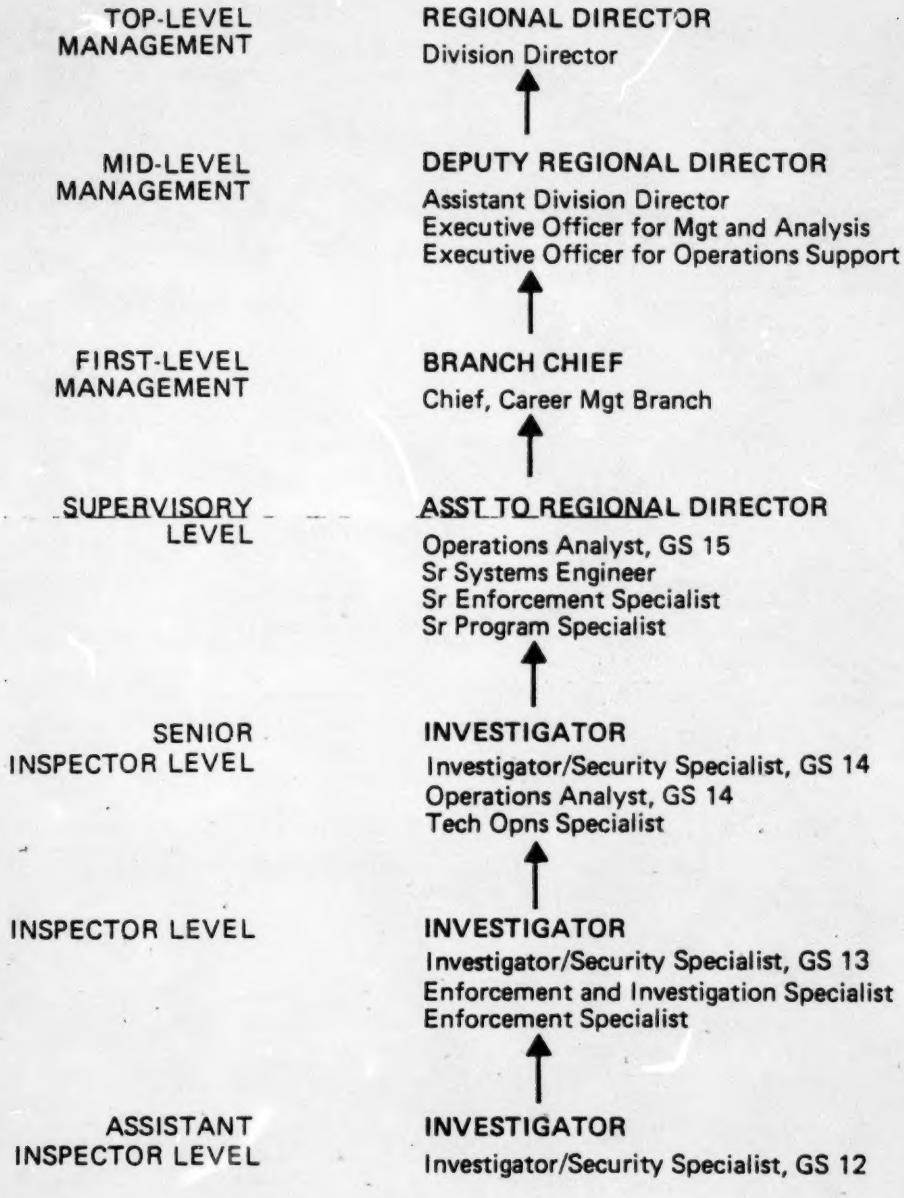
HEALTH PHYSICS CAREER FIELD

(Fig. 3.49)



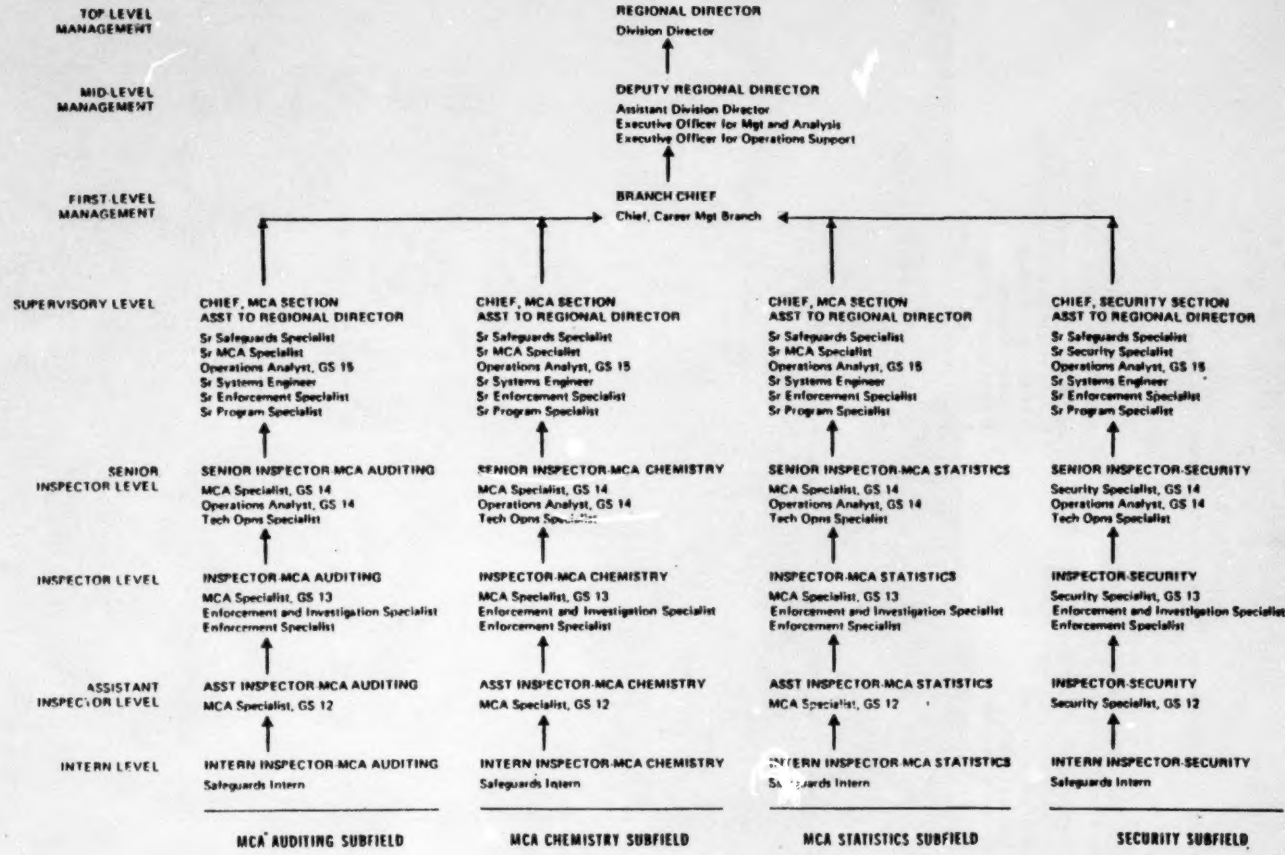
FUEL FACILITIES CAREER LADDER

(Fig. 3.50)

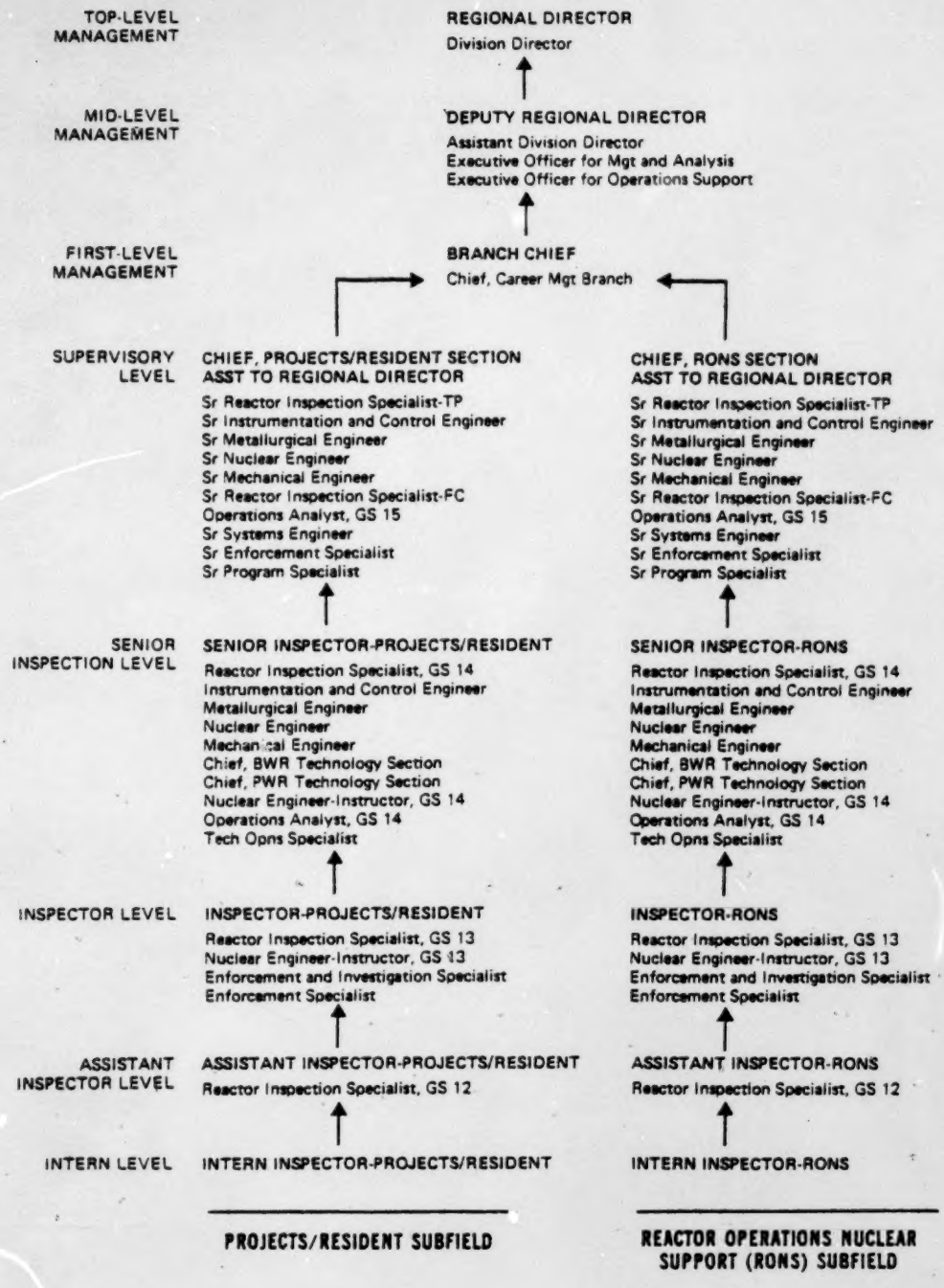


INVESTIGATOR CAREER LADDER

(Fig. 3.51)

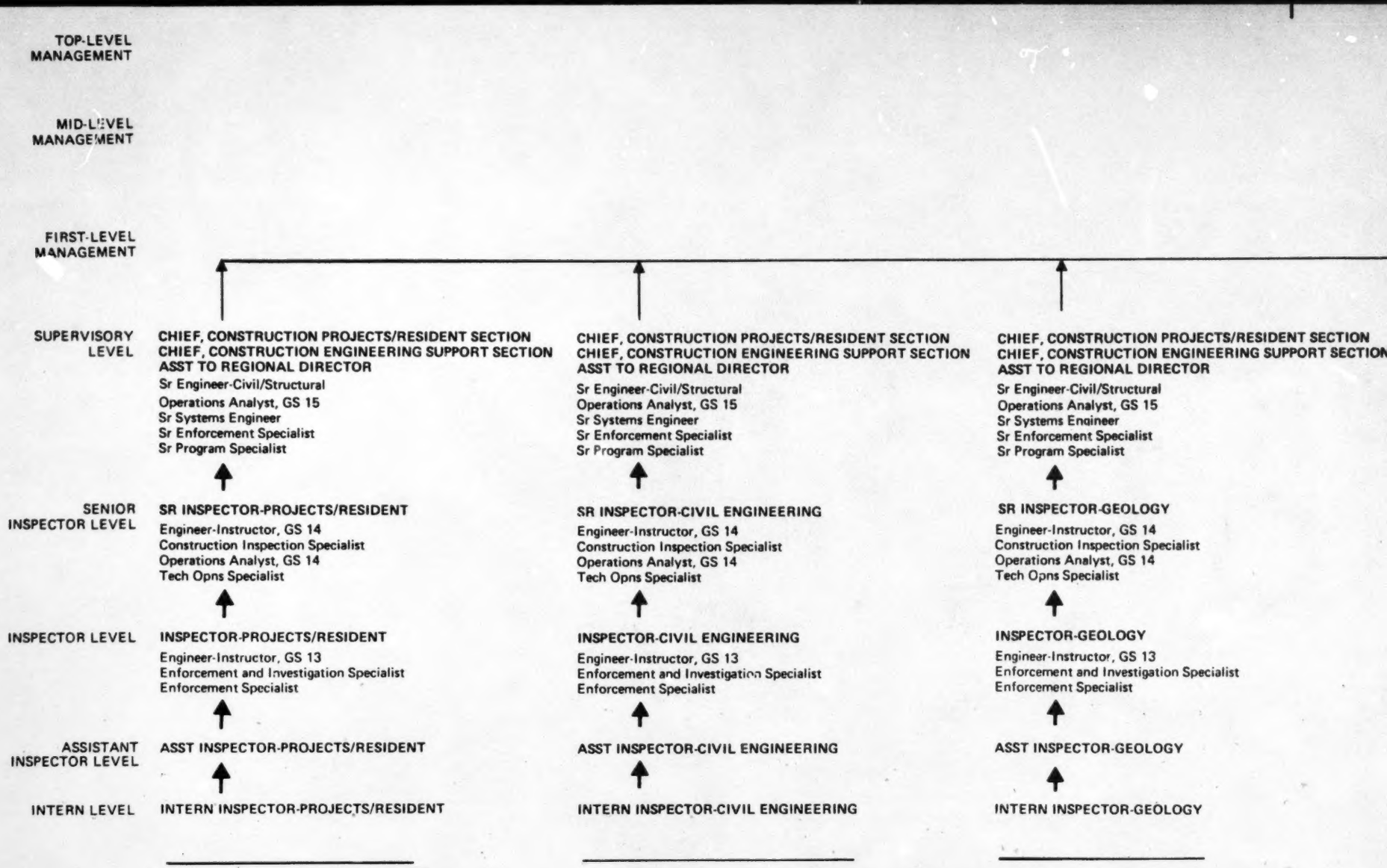


SAFEGUARDS CAREER FIELD



INTRAFIELD MOBILITY: Intrafield mobility cannot be detailed because there is no standard, NCR/IE-wide breakout of functions between the two subfields.

REACTOR OPERATIONS CAREER FIELD


TOP-LEVEL MANAGEMENT
MID-LEVEL MANAGEMENT
FIRST-LEVEL MANAGEMENT
SUPERVISORY LEVEL
CHIEF, CONSTRUCTION PROJECTS/RESIDENT SECTION
CHIEF, CONSTRUCTION ENGINEERING SUPPORT SECTION
ASST TO REGIONAL DIRECTOR
Sr Engineer-Civil/Structural
Operations Analyst, GS 15
Sr Systems Engineer
Sr Enforcement Specialist
Sr Program Specialist
CHIEF, CONSTRUCTION PROJECTS/RESIDENT SECTION
CHIEF, CONSTRUCTION ENGINEERING SUPPORT SECTION
ASST TO REGIONAL DIRECTOR
Sr Engineer-Civil/Structural
Operations Analyst, GS 15
Sr Systems Engineer
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ASST TO REGIONAL DIRECTOR
Sr Engineer-Civil/Structural
Operations Analyst, GS 15
Sr Systems Engineer
Sr Enforcement Specialist
Sr Program Specialist
SENIOR INSPECTOR LEVEL
SR INSPECTOR-PROJECTS/RESIDENT
Engineer-Instructor, GS 14
Construction Inspection Specialist
Operations Analyst, GS 14
Tech Opns Specialist
SR INSPECTOR-CIVIL ENGINEERING
Engineer-Instructor, GS 14
Construction Inspection Specialist
Operations Analyst, GS 14
Tech Opns Specialist
SR INSPECTOR-GEOLOGY
Engineer-Instructor, GS 14
Construction Inspection Specialist
Operations Analyst, GS 14
Tech Opns Specialist
INSPECTOR LEVEL
INSPECTOR-PROJECTS/RESIDENT
Engineer-Instructor, GS 13
Enforcement and Investigation Specialist
Enforcement Specialist
INSPECTOR-CIVIL ENGINEERING
Engineer-Instructor, GS 13
Enforcement and Investigation Specialist
Enforcement Specialist
INSPECTOR-GEOLOGY
Engineer-Instructor, GS 13
Enforcement and Investigation Specialist
Enforcement Specialist
ASSISTANT INSPECTOR LEVEL
ASST INSPECTOR-PROJECTS/RESIDENT
ASST INSPECTOR-CIVIL ENGINEERING
ASST INSPECTOR-GEOLOGY
INTERN LEVEL
INTERN INSPECTOR-PROJECTS/RESIDENT
INTERN INSPECTOR-CIVIL ENGINEERING
INTERN INSPECTOR-GEOLOGY
PROJECTS/RESIDENT SUBFIELD
CIVIL ENGINEERING SUBFIELD
GEOLOGY SUBFIELD
INTRAFIELD MOBILITY:
PRACTICAL
Civil Engineering to Projects/Resident
Metallurgy to Projects/Resident
Electrical & Instrumentation to Projects/Resident
Mechanical Engineering to Projects/Resident
Fuels to Program Evaluation
Projects/Resident to Program Evaluation
Metallurgy to Fuels
Fuels to Metallurgy
Mechanical Engineering to Fuels
Fuels to Mechanical Engineering
DIFFICULT
Geology to Projects/Resident
Program Evaluation to Projects/Resident
Civil Engineering to Mechanical Engineering
Mechanical Engineering to Civil Engineering

REGIONAL DIRECTOR
Division Director

DEPUTY REGIONAL DIRECTOR
Assistant Division Director
Executive Officer for Mgt and Analysis
Executive Officer for Operations Support

BRANCH CHIEF
Chief, Career Mgt Branch

CONSTRUCTION—VENDOR CAREER FIELD

METALLURGY SUBFIELD

CHIEF, CONSTRUCTION PROJECTS/RESIDENT SECTION
CHIEF, CONSTRUCTION ENGINEERING SUPPORT SECTION
ASST TO REGIONAL DIRECTOR
Sr Engineer-Civil/Structural
Sr Engineer-Metallurgical
Operations Analyst, GS 15
Sr Systems Engineer
Sr Engorcement Specialist
Sr Program Specialist

SR INSPECTOR-METALLURGY
Engineer-Instructor, GS 14
Construction Inspection Specialist
Operations Analyst, GS 14
Tech Opns Specialist

INSPECTOR-METALLURGY
Engineer-Instructor, GS 13
Enforcement and Investigation Specialist
Enforcement Specialist

ASST INSPECTOR-METALLURGY

INTERN INSPECTOR-METALLURGY

Geology to Civil Engineering
Civil Engineering to Geology
Civil Engineering to Pgm Evaluation
Metallurgy to Mechanical Engineering

ELECTRICAL AND INSTRUMENTATION SUBFIELD

CHIEF, CONSTRUCTION PROJECTS/RESIDENT SECTION
CHIEF, CONSTRUCTION ENGINEERING SUPPORT SECTION
CHIEF, LCVI COMPONENTS SECTION
ASST TO REGIONAL DIRECTOR
Sr Engineer-Electrical
Operations Analyst, GS 15
Sr Systems Engineer
Sr Enforcement Specialist
Sr Program Specialist

SR INSPECTOR-ELECTRICAL AND INSTRUMENTATION
SR INSPECTOR-ELECTRICAL COMPONENTS
Engineer-Instructor, GS 14
Construction Inspection Specialist
Operations Analyst, GS 14
Tech Opns Specialist

INSPECTOR-ELECTRICAL AND INSTRUMENTATION
INSPECTOR-ELECTRICAL COMPONENTS
Engineer-Instructor, GS 13
Enforcement and Investigation Specialist
Enforcement Specialist

ASST INSPECTOR-ELECTRICAL AND INSTRUMENTATION
ASST INSPECTOR-ELECTRICAL COMPONENTS

INTERN INSPECTOR-ELECTRICAL AND INSTRUMENTATION
INTERN INSPECTOR-ELECTRICAL COMPONENTS

Mechanical Engineering to Metallurgy
Metallurgy to Pgm Evaluation
E&I to Pgm Evaluation
Mechanical Engineering to Pgm Evaluation

MECHANICAL ENGINEERING SUBFIELD

CHIEF, LCVI COMPONENTS SECTION
ASST TO REGIONAL DIRECTOR
Sr Engineer-Mechanical
Operations Analyst, GS 15
Sr Systems Engineer
Sr Enforcement Specialist
Sr Program Specialist

SR INSPECTOR-MECHANICAL ENGINEERING
SR INSPECTOR-MECHANICAL COMPONENTS
Engineer-Instructor, GS 14
Construction Inspection Specialist
Operations Analyst, GS 14
Tech Opns Specialist

INSPECTOR-MECHANICAL ENGINEERING
INSPECTOR-MECHANICAL COMPONENTS
Engineer-Instructor, GS 13
Enforcement and Investigation Specialist
Enforcement Specialist

ASST INSPECTOR-MECHANICAL ENGINEERING
ASST INSPECTOR-MECHANICAL COMPONENTS

INTERN INSPECTOR-MECHANICAL ENGINEERING
INTERN INSPECTOR-MECHANICAL COMPONENTS

FUELS SUBFIELD

CHIEF, LCVI COMPONENTS SECTION
ASST TO REGIONAL DIRECTOR
Operations Analyst, GS 15
Sr Systems Engineer
Sr Enforcement Specialist
Sr Program Specialist

SR INSPECTOR-FUEL COMPONENTS
Engineer-Instructor, GS 14
Construction Inspection Specialist
Operations Analyst, GS 14
Tech Ops Specialist

INSPECTOR-FUEL COMPONENTS
Engineer-Instructor, GS 13
Enforcement and Investigation Specialist
Enforcement Specialist

ASST INSPECTOR-FUEL COMPONENTS

INTERN INSPECTOR-FUEL COMPONENTS

PROGRAM EVALUATION SUBFIELD

CHIEF, LCV PROGRAM EVALUATION SECTION
ASST TO REGIONAL DIRECTOR
Operations Analyst, GS 15
Sr Systems Engineer
Sr Enforcement Specialist
Sr Program Specialist

SR INSPECTOR-LCV PROGRAM EVALUATION
Engineer-Instructor, GS 14
Construction Inspection Specialist
Operations Analyst, GS 14
Tech Ops Specialist

INSPECTOR-LCV PROGRAM EVALUATION
Engineer-Instructor, GS 13
Enforcement and Investigation Specialist
Enforcement Specialist

ASST INSPECTOR-LCV PROGRAM EVALUATION

INTERN INSPECTOR-LCV PROGRAM EVALUATI

IMPRACTICAL

All other intrafield transfers are impractical for the typical career field member.

(Fig. 3.54)

Chapter 4

RECOMMENDATIONS

GENERAL

The following recommendations are based upon data and discussions in Chapter 3. All are within the implementation authority of Headquarters, NRC/IE.

SPECIFIC RECOMMENDATIONS

- Health Physics Career Field. That NRC/IE approve the combination of the two subfields (Material Radiological Protection and Radiation Support/Environmental) into one career field, as described in Chapter 3; and the retitling of all positions as Health Physics inspectors at the appropriate level, without note of any specialty.

- Safeguards Career Field. That NRC/IE approve the combination of the Nuclear Material Auditing and Statistics Subfields into one subfield, as described in Chapter 3; the appropriate retitling of these positions as Nuclear Material Auditing/Statistics inspectors at the appropriate level; and the redesignation of the present Physical Security positions as Security positions, within a separate Safeguards Security Career Subfield.

- Construction-Vendor Career Field. That NRC/IE approve the career field described in Chapter 3 with its eight subfields, simultaneously dropping the present Quality Assurance specialty.

- Reactor Operations Career Field. That NRC/IE approve, as an interim measure, the career field described in Chapter 3. This area will require a resurvey after NRC/IE establishes a standard division of duties between Reactor Operations Projects/Resident and Nuclear Support inspectors. (See page 3-4, Volume I of the Task I report, for detail regarding this recommendation.)

- Fuel Facilities Career Ladder. That NRC/IE approve the career ladder described in Chapter 3; the retitling of all positions as Fuel Processing inspectors at the appropriate level; and the designation of this specialty as the Fuel Processing Career Ladder.

- Investigator Ladder. That NRC/IE approve the career ladder described in Chapter 3; note the comparably disadvantaged position of the investigator in the NRC/IE family; and consider improving the investigator's status in future organizational moves, e.g., the organization of Performance Appraisal Teams.

- Headquarters and Regional Position Titles. That NRC/IE review the position nomenclature of Appendices D and E in the light of the recommendations listed above; revise as required; and prescribe the product as the standard for personnel and training management.

- Assignment of Responsibilities. That NRC/IE designate the Chief, Resource Management Branch, as responsible for predicting workload requirements up to 3 years in the future: and the Chief, Career Management Branch, as responsible for appropriate personnel planning and preparation to meet the predicted requirements.

Appendix A

LEVELS OF KNOWLEDGE AND PERFORMANCE

LEVEL A: EXPERT KNOWLEDGE

Expert knowledge at this level is a thorough understanding of the theory, principles and design considerations underlying the specialized area under consideration, an understanding which reflects the current "state of the art." It is the product of in-depth training, formalized education and extensive experience in the specified area superior to that identified for Level B (below). Knowledge at this level enables its possessor to write procedures and regulations which are authentic and accurate. He or she has a mastery of specialized techniques and can devise solutions to unusual or novel problems which emerge in the area of specialization. This person is an authority in the area, whose judgments are accepted by associates. The expert will detect a deviation from standards, codes, rules, good working procedures, etc., should it occur in his or her presence.

This expertise may have been demonstrated by technical journal publications or by activities within a technical society including positions on committees.

LEVEL B: THOROUGH UNDERSTANDING

Thorough understanding of the area under consideration and an appreciation of the theory and principles from which its procedures and regulations evolve qualify the possessor for this level. This understanding is based on both broad experience in the area and in-depth training in the details of the subject. Thorough understanding entails knowing the <u>why</u> of the rules and the consequences of their misapplication or nonapplication. Its possessor can readily detect deviations from prescribed standards; more than that, can spot situations which pose danger, even though not specifically covered by guidance. He or she has a mastery of the more specialized techniques and can even devise solutions to unusual or novel problems. This person is not the authority in the area, but is one whose judgments are accepted by associates.

With regard to codes, procedures and other documentation, thorough understanding means a knowledge of their existence and proficiency in their use as reference material, and sufficient familiarity with their content to permit evaluation of activities against them without constant referral. It means also a good working knowledge of facilities and processes, i.e., high conversance with the technology and sufficient understanding of the details of design, operation, purpose and application to recognize the less obvious problems or deficiencies.

Because of the depth and breadth of knowledge, he or she may independently suggest acceptance criteria when confronted with situations not covered by published codes, procedures and other documentation. Its possessor is on a level with or slightly above that of an ASME or ANSI Level III for reactor construction-related areas and 85 percent that of a Senior Reactor Operator for reactor operations-related areas.

LEVEL C: WORKING KNOWLEDGE

A working knowledge is that possessed by the experienced worker in this field. It means an understanding of the area under consideration, and an appreciation for the theory and principles upon which its rules are based.

With regard to codes, procedures and other documentation, its possessor is knowledgeable of their existence and is familiar with their content to the extent of being proficient in their use as reference material to determine compliance or noncompliance. He or she has a working knowledge of facilities and processes, i.e., is generally conversant in the technology and has sufficient understanding of the design, operation, purpose and application to recognize the more obvious problems or deficiencies.

With use of reference documentation, one with working knowledge can detect deviations from prescribed standards and can recommend appropriate corrective actions. He or she can interpret inspection findings in terms of compliance or noncompliance with standards. Although the work is routine, it contributes to the development of rules and regulations. The product is reviewed for the application of sound professional judgment.

Working knowledge implies a capability to defend findings before one's peers and associates, and to participate in the decision process. Its possessor is on a level with or above that of an ASME or ANSI Level II for reactor construction-related areas and 50 percent that of a Senior Reactor Operator for reactor operations-related areas.

LEVEL D: GENERAL FAMILIARITY

General familiarity with a topic is that possessed by the well-grounded beginner. It means knowing the field applications of one's education and training and understanding the technical language of the area. Although its possessor does not yet add to the technical knowledge of the field, he or she is acquainted with the sources of knowledge.

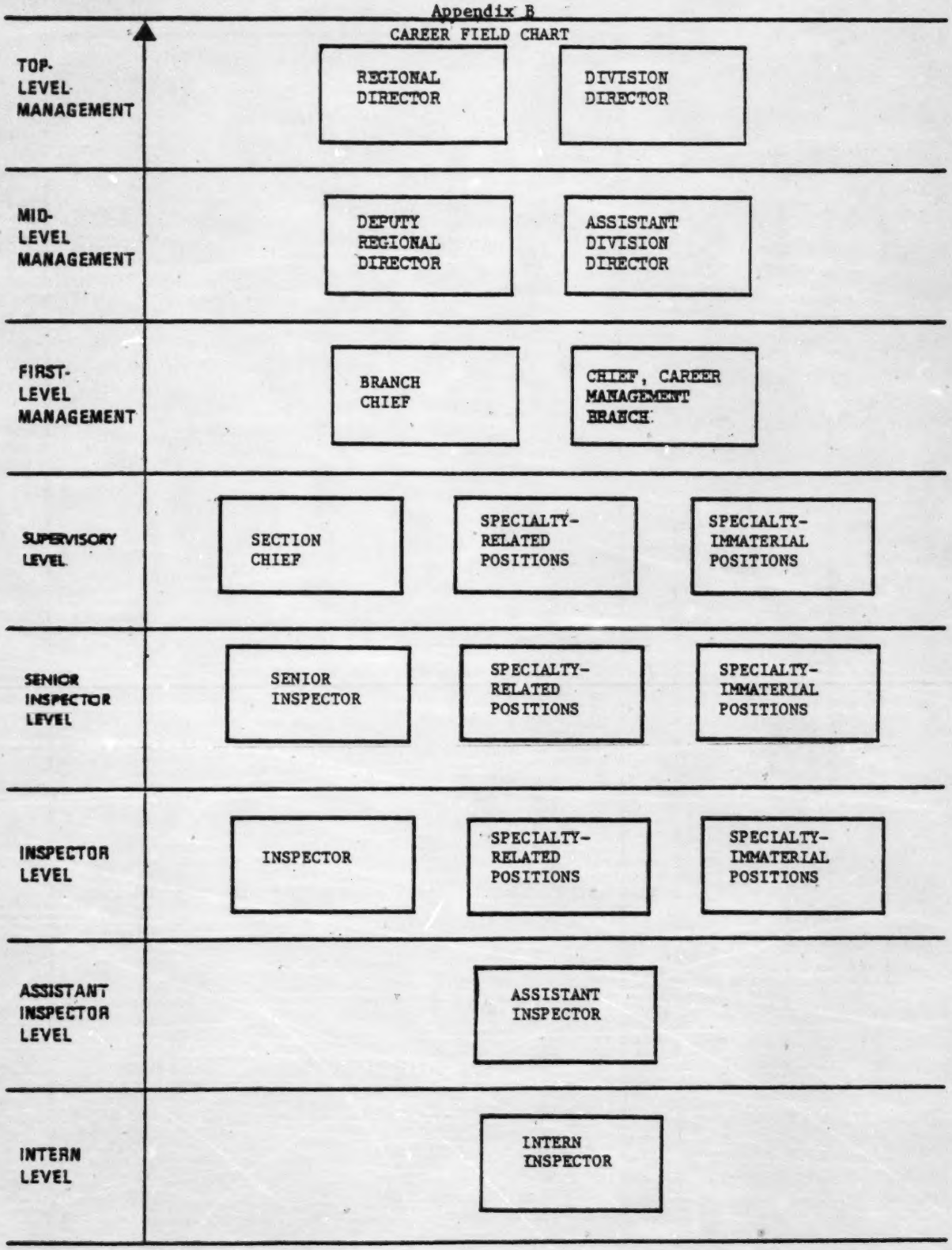
With regard to codes, procedures and other documentation, it equates to general awareness of their existence and a familiarity with their overall content. With assistance, the person who is generally familiar can use this documentation as reference material to determine compliance or noncompliance. He or she has a rudimentary technical terminology associated with these facilities and processes, and has a beginner's understanding of their design, operation, purpose and application.

Under supervision he or she can identify the less complex deviations from known standards and can help direct their correction. There is limited exercise of judgment in the details of the work and in adapting alternatives.

General familiarity implies a capability to follow up on findings and to present one's work to his or her supervisor. The qualifications are on a level with or slightly above that of an ASME or ANSI Level I for reactor construction-related areas and a Reactor Operator Trainee for reactor operations-related areas.

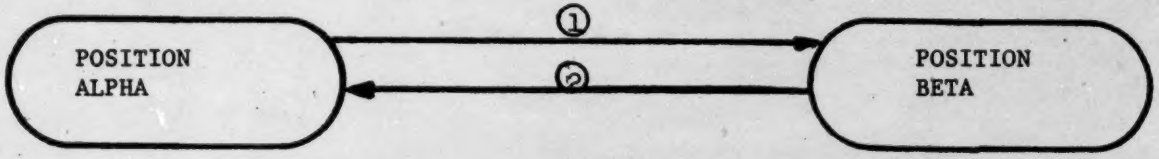
Appendix B

CAREER FIELD CHART



Appendix C

MOBILITY AMONG POSITIONS



MOBILITY PATH	①	②
PROGRAM SUBJECT AREAS (PSA) NECESSARY FOR MOVEMENT	Acquire a thorough understanding of: (Here are listed PSA required for Position Beta but not for Alpha, from the standard PSA-listing of the Task IV report.) Successfully complete the following NRC/IE courses: (Here are listed NRC/IE courses required for Position Beta but not for Alpha, from the current training course listing of the Task III report.)	Acquire a thorough understanding of: (Here are listed PSA required for Position Alpha but not for Beta, from the standard PSA-listing of the Task IV report.) Successfully complete the following NRC/IE courses: (Here are listed NRC/IE courses required for Position Alpha but not for Beta, from the current training course listing of the Task III report.)

84

Appendix D

NRC/IE JOB/POSITION CLASSIFICATIONS
HEADQUARTERS

1. Director (ROI)
2. Assistant Director - Field Coordination (ROI)
3. Assistant Director - Technical Programs (ROI)
4. Senior Reactor Inspection Specialist-TP (ROI)
*5. Reactor Inspection Specialist (ROI), GS 14
6. Reactor Inspection Specialist (ROI), GS 13
7. Reactor Inspection Specialist (ROI), GS 12
8. Senior Instrumentation and Control Engineer (ROI)
9. Instrumentation and Control Engineer (ROI)
10. Senior Metallurgical Engineer (ROI)
11. Metallurgical Engineer (ROI)
12. Senior Nuclear Engineer (ROI)
13. Nuclear Engineer (ROI)
14. Senior Mechanical Engineer (ROI)
15. Mechanical Engineer (ROI)
16. Senior Reactor Inspection Specialist-FC (ROI)
17. Director (RCI)
18. Assistant Director (RCI)
19. Senior Engineer - Civil/Structural (RCI)
20. Senior Engineer - Electrical (RCI)
21. Senior Engineer - Mechanical (RCI)
22. Senior Engineer - Metallurgical (RCI)
23. Senior Construction Inspection Specialist (RCI)
24. Construction Inspection Specialist (RCI)
25. Director (SI)
26. Assistant Director (SI)
27. Senior Safeguards Specialist (SI)
28. Senior Material Control and Accounting Specialist (SI)
29. Material Control and Accounting Specialist (SI), GS 14
30. Material Control and Accounting Specialist (SI), GS 13
31. Material Control and Accounting Specialist (SI), GS 12
32. Senior Security Specialist (SI)
33. Security Specialist (SI), GS 14
34. Security Specialist (SI), GS 13
35. Security Specialist (SI), GS 12
36. Investigator/Security Specialist (SI), GS 14
37. Investigator/Security Specialist (SI), GS 13
38. Investigator/Security Specialist (SI), GS 12
39. Safeguards Intern (SI)
40. Director (FFMS)

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*GS grades are included only where necessary to differentiate among similarly titled positions.

41. Assistant Director (FFMS)
42. Senior Staff Specialist - Radiation Support/Environmental (FFMS)
43. Staff Specialist - Radiation Support/Environmental (FFMS)
44. Senior Staff Specialist - Materials Radiological Protection (FFMS)
45. Staff Specialist - Materials Radiological Protection (FFMS)
46. Senior Staff Specialist - Fuel Facilities (FFMS)
47. Staff Specialist - Fuel Facilities (FFMS)
48. Executive Officer for Management and Analysis (XOMA)
49. Contracts Administrator (XOMA)
50. Chief, Career Management Branch (XOMA)
51. Chief, BWR Technology Section (XOMA)
52. Chief, PWR Technology Section (XOMA)
53. Nuclear Engineer - Instructor (XOMA), GS 14
54. Nuclear Engineer - Instructor (XOMA), GS 13
55. Engineer - Instructor (XOMA), GS 14
56. Engineer - Instructor (XOMA), GS 13
57. Chief, Resource Management Branch (XOMA)
58. Management Analyst (XOMA)
59. Chief, Program Management Information Branch (XOMA)
60. Systems Analyst (XOMA)
61. Operations Analyst (XOMA), GS 15
62. Operations Analyst (XOMA), GS 14
63. Executive Officer for Operations Support (XOOS)
64. Chief, I&E Mail and File Unit (XOOS)
65. Technical Operations Specialist (XOOS)
66. Enforcement and Investigation Specialist (XOOS)
67. Enforcement Specialist (XOOS)
68. Senior Systems Engineer (XOOS)
69. Senior Enforcement Specialist (XOOS)
70. Administrative Officer (XOOS)
71. Senior Program Specialist (XOOS)

Appendix E

NRC/IE JOB/POSITION CLASSIFICATIONS
REGIONAL

1. Regional Director
2. Deputy Regional Director
3. Assistant to the Regional Director
4. Investigator
5. Chief, Reactor Operations Branch
6. Chief, Reactor Operations Projects/Resident Section (ROB)
7. Senior Inspector - Reactor Operations Projects/Resident (ROB)
8. Inspector - Reactor Operations Projects/Resident (ROB)
9. Assistant Inspector - Reactor Operations Projects/Resident (ROB)
10. Intern Inspector - Reactor Operations Projects/Resident (ROB)
11. Chief, Reactor Operations Nuclear Support Section (ROB)
12. Senior Inspector - Reactor Operations Nuclear Support (ROB)
13. Inspector - Reactor Operations Nuclear Support (ROB)
14. Assistant Inspector - Reactor Operations Nuclear Support (ROB)
15. Intern Inspector - Reactor Operations Nuclear Support (ROB)
16. Chief, Construction Branch
17. Chief, Construction Projects/Resident Section (RCB)
18. Senior Inspector - Construction Projects/Resident (RCB)
19. Inspector - Construction Projects/Resident (RCB)
20. Assistant Inspector - Construction Projects/Resident (RCB)
21. Intern Inspector - Construction Projects/Resident (RCB)
22. Chief, Construction Engineering Support Section (RCB)
23. Senior Inspector - Construction, Civil Engineering (RCB)
24. Inspector - Construction, Civil Engineering (RCB)
25. Assistant Inspector - Construction, Civil Engineering (RCB)
26. Intern Inspector - Construction, Civil Engineering (RCB)
27. Senior Inspector - Construction, Electrical and Instrumentation (RCB)
28. Inspector - Construction, Electrical and Instrumentation (RCB)
29. Assistant Inspector - Construction, Electrical and Instrumentation (RCB)
30. Intern Inspector - Construction, Electrical and Instrumentation (RCB)
31. Senior Inspector - Construction, Mechanical Engineering (RCB)
32. Inspector - Construction, Mechanical Engineering (RCB)
33. Assistant Inspector - Construction, Mechanical Engineering (RCB)
34. Intern Inspector - Construction, Mechanical Engineering (RCB)
35. Senior Inspector - Construction, Metallurgy (RCB)
36. Inspector - Construction, Metallurgy (RCB)
37. Assistant Inspector - Construction, Metallurgy (RCB)
38. Intern Inspector - Construction, Metallurgy (RCB)
39. Senior Inspector - Construction, Geology (RCB)
40. Inspector - Construction, Geology (RCB)

41. Assistant Inspector - Construction, Geology (RCB)
42. Intern Inspector - Construction, Geology (RCB)
43. Chief, Fuel Facilities and Materials Safety Branch
44. Chief, Fuel Facilities Section (FFMSB)
45. Senior Inspector - Fuel Facilities (FFMSB)
46. Inspector - Fuel Facilities (FFMSB)
47. Assistant Inspector - Fuel Facilities (FFMSB)
48. Intern Inspector - Fuel Facilities (FFMSB)
49. Chief, Materials Radiological Protection Section (FFMSB)
50. Senior Inspector - Materials Radiological Protection (FFMSB)
51. Inspector - Materials Radiological Protection (FFMSB)
52. Assistant Inspector - Materials Radiological Protection (FFMSB)
53. Intern Inspector - Materials Radiological Protection (FFMSB)
54. Chief, Radiation Support Section (FFMSB)
55. Chief, Environmental and Special Projects Section (FFMSB)
56. Senior Inspector - Radiation Support/Environmental (FFMSB)
57. Inspector - Radiation Support/Environmental (FFMSB)
58. Assistant Inspector - Radiation Support/Environmental (FFMSB)
59. Intern Inspector - Radiation Support/Environmental (FFMSB)
60. Chief, Safeguards Branch
61. Chief, Material Control and Accounting (MCA) Section (SB)
62. Senior Inspector - Safeguards, MCA Auditing (SB)
63. Inspector - Safeguards, MCA Auditing (SB)
64. Assistant Inspector - Safeguards, MCA Auditing (SB)
65. Intern Inspector - Safeguards, MCA Auditing (SB)
66. Senior Inspector - Safeguards, MCA Chemistry (SB)
67. Inspector - Safeguards, MCA Chemistry (SB)
68. Assistant Inspector - Safeguards, MCA Chemistry (SB)
69. Intern Inspector - Safeguards, MCA Chemistry (SB)
70. Senior Inspector - Safeguards, MCA Statistics (SB)
71. Inspector - Safeguards, MCA Statistics (SB)
72. Assistant Inspector - Safeguards, MCA Statistics (SB)
73. Intern Inspector - Safeguards, MCA Statistics (SB)
74. Chief, Security Section (SB)
75. Senior Inspector - Safeguards, Security (SB)
76. Inspector - Safeguards, Security (SB)
77. Assistant Inspector - Safeguards, Security (SB)
78. Intern Inspector - Safeguards, Security (SB)
79. Chief, Licensee Contractor Vendor Inspection Branch
80. Chief, Licensee Contractor Vendor Inspection Components Section (LCVIB)
81. Senior Inspector - LCV, Electrical Components (LCVIB)
82. Inspector - LCV, Electrical Components (LCVIB)
83. Assistant Inspector - LCV, Electrical Components (LCVIB)
84. Intern Inspector - LCV, Electrical Components (LCVIB)
85. Senior Inspector - LCV, Fuel Components (LCVIB)
86. Inspector - LCV, Fuel Components (LCVIB)
87. Assistant Inspector - LCV, Fuel Components (LCVIB)
88. Intern Inspector - LCV, Fuel Components (LCVIB)
89. Senior Inspector - LCV, Mechanical Components (LCVIB)
90. Inspector - LCV, Mechanical Components (LCVIB)
91. Assistant Inspector - LCV, Mechanical Components (LCVIB)

92. Intern Inspector - LCV, Mechanical Components (LCVIB)
93. Chief, Licensee Contractor Vendor Inspection Program Evaluation Section (LCVIB)
94. Senior Inspector - LCV, Program Evaluation (LCVIB)
95. Inspector - LCV, Program Evaluation (LCVIB)
96. Assistant Inspector - LCV, Program Evaluation (LCVIB)
97. Intern Inspector - LCV, Program Evaluation (LCVIB)

Appendix F

SPECIAL POSITIONS

SPECIALTY-IMMATERIAL POSITIONS

Mid-Level Management

Executive Officer for Management and Analysis (H-48)*
Executive Officer for Operations Support (H-63)

First-Level Management

Chief, Career Management Branch (H-50)

Supervisory Level

Operations Analyst, GS 15 (H-61)
Senior Systems Engineer (H-68)
Senior Enforcement Specialist (H-69)
Senior Program Specialist (H-71)
Assistant to the Regional Director (R-3)

Senior Inspector Level

Operations Analyst, GS 14 (H-62)
Technical Operations Specialist (H-65)

Inspector Level

Enforcement and Investigation Specialist (H-66)
Enforcement Specialist (H-67)

EXCLUDED POSITIONS

Contracts Administrator (H-49)
Chief, Resource Management Branch (H-57)
Management Analyst (H-58)
Chief, Program Management Information Branch (H-59)
Systems Analyst (H-60)
Chief, I&E Mail and File Unit (H-64)
Administrative Officer (H-70)

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*Numbers in parentheses refer to position numbers in Appendices D and E.

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This document is the General Research Corporation (GRC) report on Task II, which called for the development of career fields for Headquarters and regional positions of NRC/IE. GRC examined the data of Task I (Development of Qualifications Requirements) for commonality of knowledge and performance, postulated career fields as a result of that examination, and tested and revised those career fields by more extensive examination. Proposed as a result of this are four career fields: Construction-Vendor, Health Physics, Reactor Operations, and Safeguards; and two "career ladders": Fuel Facilities and Investigation. (The term "career ladder" was chosen to describe the relatively narrow patterns of positions open to its members.) All career fields include subfields, which are described in full in the report. In addition to recommending acceptance of these career fields, this document proposes the combination of certain subfields, the retitling of some positions, and the adoption of a standard nomenclature for all NRC/IE positions.

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